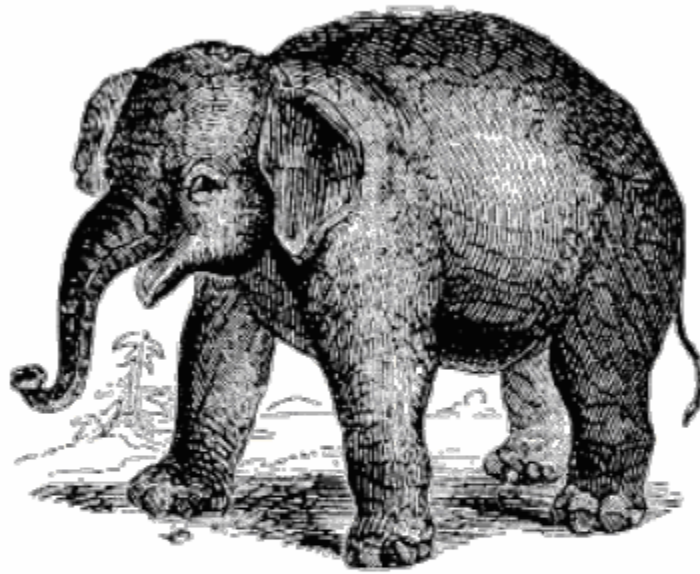# Math 016

Homework
Class work
Quizzes

May 2010, 2nd version

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1. Perform the following multiplications without any use of a calculator. Please, show your work.

a) 45×6 b) 15×23

c) 7×362 d) 12×904

e) 38×760 e) 372×485

1. Perform the following division problems without any use of a calculator. Please, show your work.

a) $492 \div 6$

b) $608 \div 8$

c) $3231 \div 9$

d) $516 \div 12$

e) $5312 \div 64$

f) $2268 \div 27$

_____

1. Rewrite the following numerical expressions inserting a multiplication sign '×' whenever multiplication is implied.

a) (9)(3)(4)

b) $(16+12)77$

c) $3(15) \div 4(11)$

2. Write the following division problems using fraction notation, and then evaluate the expression.
$$36 \div 6$$

3. First name the operation that is to be performed together with the name of its result, then evaluate each expression.

a) $0 \div 23$

b) 3(12)

c) $36+100$

4. Write each of the following statements as numerical expressions, and then evaluate:

a) The product of 14 and 10

b) 7 subtracted from 15

c) The sum of 15 and 14

d) The quotient of 0 and 15

1. Perform the following operations any time they are defined. If they are not defined, please write "not defined".

a) $9 \div 0$

b) $\dfrac{0}{9-0}$

c) $\dfrac{9-0}{9}$

d) $0-0$

e) 9×0

f) $\dfrac{0}{0}$

g) 0×0

h) $9-9$

_____

1. Fill in the blanks.

The opposite operation to multiplication is _____ .

The opposite operation to subtraction is _____ .

2. Identify the operation that is performed in the following examples and then find the opposite operation together with the appropriate operand to "undo it".

a) $54 \div 9$

b) $7 + 8$

3. If $758 \times 921 = 698118$, then what is $698118 \div 921$ equal to? Justify your answer.

4. If $89765 - 54321 = 35444$, then what is $35444 + 54321$ equal to? Justify your answer.

5. Name the property making the following statement true $8(3) = (3)8$.

Which of the following operation also satisfy this property?

a) subtraction

b) addition

c) division

6. If $46532 + 89734 = 136266$, then what is $89734 + 46532$ equal to? Explain why.

1. Perform the following operations. Please, make sure that you present your answer in a correct way, using the '=' sign.

a) 45×10

b) 100×24

c) 10000×561

d) 1000×200

e) 1×1000

f) 0×10000000

g) 100×10000

h) 100×102030

_____

1. Write the following statements using exponential notation and then evaluate them.

a) 10 raised to the 5th power

b) exponential expression with base equal to 8 and exponent equal to 2

c) 5 cubed

2. Expand, meaning write without exponential notation.

a) 35^4

b) 3456^1

3. Write the following expressions using exponential notation whenever possible. Please, **do not** evaluate.

a) $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

b) $\dfrac{2 + 2 + 2}{2(2)(2)}$

c) $33 \times 33 \times 33 \times 33 \times 3 \times 3$

d) $(345 - 17)(345 - 17)$

e) $4 \times 4 \times 4 - 4 \times 4 \times 4 \times 4 \times 4$

1. Perform the following operations.

a) 8^2

b) 2^5

c) 1^6

d) 1000^2

e) 100^3

f) 432^1

g) 10^8

2. To what power do we need to raise number 10 to get 100,000,000? How about number 100?

1. Name the first operation that has to be performed in accordance to the presumed order of operations. Then evaluate the expressions performing *one operation at a time.* Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $2 + 7 \times 2$

b) $(6 + 3)^2$

c) $18 \div 3^2$

d) $12 \div 3 \times 5$

e) $5 - 1 + 2$

f) $7 - (3 + 4)$

g) $42 - (2)(6)$

_____

1. For each pair of the following expression, the second one is obtained from the first one by rewriting it without parentheses. Evaluate each of them to find out if inclusion of parentheses gives a different result.

a) $12 \div (4 \times 3)$ $12 \div 4 \times 3$

b) $301 - (3 \times 100)$ $301 - 3 \times 100$

c) $(2 \times 1)^5$ 2×1^5

2. Write the following statements using mathematical symbols, and then evaluate them.

a) First find the sum of 12 and 8, then subtract the result from 80

b) First raise 7 to the second power, then multiply the result by 100

c) First find the quotient of 42 and 6, then add the result to 12.

d) First find the product of 10 and 100, then subtract 99 from the result.

_____

1. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $50 \div 10 \times 5$

b) $10 \div 2 - 0$

c) $40 - 8 \times 5$

d) $(2 \times 5)^7$

e) $6 - 3 - 2$

f) $81 \div 9 \times 3$

g) $(9 - 9) \times 423$

h) $12 - 6 \div 0$

i) $76 + 24 \div 2$

j) $(17 + 3) \div 5$

k) 100×7^2

_____

1. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $35 \div (18 - 18)$

b) 50×100^3

c) $(9 - 8)(7 - 6)$

d) $7 + 11 \times 3$

e) $32 - 20 + 5$

f) $7 + 3 - 2 \times 4$

g) $(7 - 2) \times 9$

h) $6 \times 3 + 7 \times 2$

i) $8 \times (6 + 4) \times 9$

j) $22 - 4 \div (4 - 2)$

_____

1. Compare the following two expressions and write '=' between them, if they are equal, or '≠' if the expressions are not equal.

a) 67×26 _____ 26×67

b) 4^5 _____ 4×5

c) $5 \times 5 \times 5$ _____ 5^3

d) $124 + 21 \times 345$ ____ $124 + (21 \times 345)$

e) 5×7^8 _____ $(5 \times 7)^8$

2. If you know that $3333 \times 4444 = 14811852$, evaluate the following expression (apply the principle "Equals can be substituted for equals').

a) 4444×3333

b) $100 \times 3333 \times 44444$

c) $3333 \times 4444 - 2$

d) $3333 \times 4444 \div 1$

e) $14811852 - 3333 \times 4444$

1. Rewrite the following numerical expression inserting a multiplication sign "×" whenever multiplication is implied $(4)(7)\,(5-3)$

2. Write the following statement as numerical expression, and then evaluate it.
         12 subtracted from 25

3. Write the following expression using exponential notation whenever possible. Please, do not evaluate it.
         $5\times5\times5-2\times2\times2\times2$

4. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) 3040×1000

b) 8^2

c) $2+3\times6$

d) 3×4^2

e) $(2-2)\times5$

1. Write the following statement as a numerical expression, and then evaluate it.
    The sum of 24 and 7

2. Identify the operation that is performed in the following example and then find the opposite operation together with the appropriate operand to "undo it".
    $5+3$

3. If $123(4567) = 561741$ **,** then what is 4567×123 equal to? Explain how you arrived at your answer.

4. Expand, meaning write without exponential notation.
    9^4

5. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) 2000×100

b) 45^1

c) $\dfrac{7}{7-7}$

d) $7 + 5 \times 3$

e) $8 - 3 + 2$

f) 100×2^3

g) $(6-4) \div 2$

1. Write the following statement using mathematical symbols, and then evaluate.

a) The number one raised to the tenth power

b) The number ten thousand squared.

2. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $12 - (4 - 3)$

b) $7 + (2 \times 10)$

c) 352×100

d) 7^2

e) $12 + 3 \div 3$

f) 4×3^2

3. Knowing that $13^4 = 28561$, apply the principle "Equals can be substituted for equals' to evaluate the following
            $13^4 \div 1$

1. Write the following expressions using exponential notation whenever possible. Please, do not evaluate them.

a) $(8)(8)(8)(8)$

b) $(7+11)(7+11)+7+11$

2. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $6 \div 2 - 2$

b) $(100+100) \times 100$

c) $2 + 5^2$

d) $30 - 8 + 3$

3. Write the following statements using mathematical symbols, and then evaluate them.

a) First divide 16 by 4, and then subtract the result from 12.

b) First find the sum of 5 and 100, and then multiply the result by 1000 .

1. To what power do we need to raise number 100 to get 1000000?

2. Write the following statements using mathematical symbols, and then evaluate.

a) First subtract 2 from 102, and then multiply the result by 1000.

b) First find the sum of 3 and 7, and then raise the result to the 6th power.

3. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $4 + 2 \times 5$

b) $(105 - 5) \times 1000$

c) $36 \div 6 \times 0$

4. Compare each of the following two expressions and write '=' between them, if they are equal, or '≠' if the expressions are not equal.

a) 6^7 _____ 6×7

b) $(2345 - 123) + 456$ _____ $2345 - 123 + 456$

1. Write the following expressions using exponential notation whenever possible. Please, do not evaluate

a) $7(7)(7) + (7)(7)$

b) $(22 + 6)(22 + 6)$

2. Perform the following operations any time they are defined. If they are not defined, please write "not defined". Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $40 \div 2 \times 5$

b) $33 - 3 \times 5$

c) $(2 + 1) \times 4$

d) $30 - 6 \div 2$

3. Compare each of the following two expressions and write '=' between them, if they are equal, or '≠' if the expressions are not equal.

a) 6^7 _____ 6×7

b) $2345 - (123 + 456)$ _____ $2345 - 123 + 456$

4. If $31584 \div 4 = 7896$, then what 7896×4 is equal to? Explain how you arrived at your answer.

1. Write the following statements using inequality sign.

a) -6 is less than 3

b) -12 is greater than -21

2. The following water levels (as compared to the average water level there) were recorded at the same locations on a given day at noon.

1 May	1 June	1 July	1 August	1 September	1 October	1 November
-13	-16	-6	-3	2	0	-5

a) When was the water level higher, on May 1 or October 1?

b) When was the water level higher, on May 1 or June 1?

c) When was the water level higher, on July or November 1?

d) When was the water level highest?

e) When was the water level lowest?

_____

1. Fill in blanks using the following symbols '<", '>', '=' as appropriate.

a) 512 _____ 511

b) -11 _____ 11

c) 0 _____ -7

d) -2 _____ -1

e) -22 _____ -22

f) -3 _____ -8

2. Arrange the following integers in order from lowest to greatest.

$-1,\quad 0,\quad -3\quad 2\quad -4\quad 5\quad -5$

3. Replace each star with a digit such that the inequality is true (more than one answer is possible).

a) $7* > 77$

b) $-45 > -4*$

c) $-62 > -*2$

1. Locate and plot $-4, 2, -6$ on the number line.

| -10 | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 | +10 |
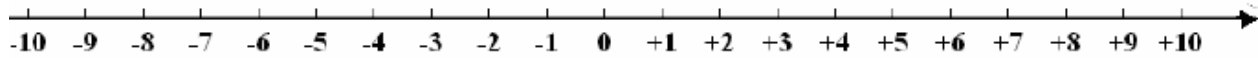
2. Create a number line (by choosing the origin and the point corresponding to number 1) and plot the following points on it (assume that the marks are equally spaced on each of the lines below)

a) -1
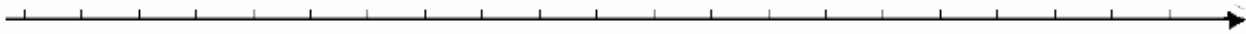
b) -8

c) 10

3. The marks are equally spaced on each of the following number lines. Plot -2 on each of the following number lines.

a)

0   +1

b)

0   +1

c)

0   +1
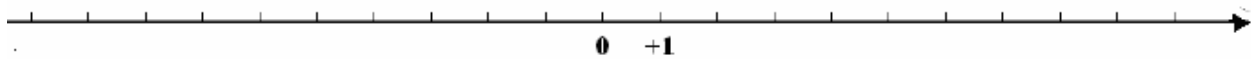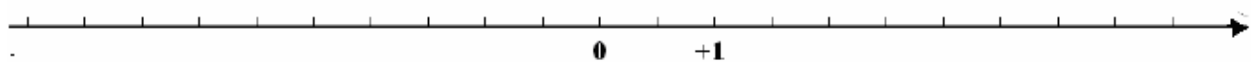
1. Plot the following pairs of numbers on the same number line and determine which one is greater, which one is smaller. Use "<", ">" symbols when writing your answer.

a) 3 and 8

```
├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
                        0    +1
```

b) -7 and -3

```
├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
                        0    +1
```

c) -5 and -6

```
├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
                        0    +1
```
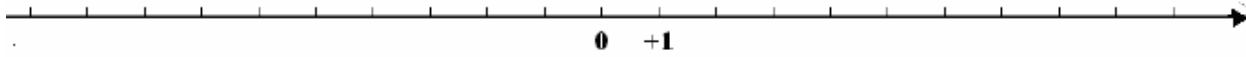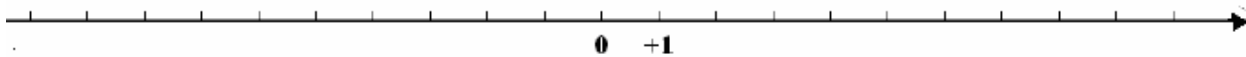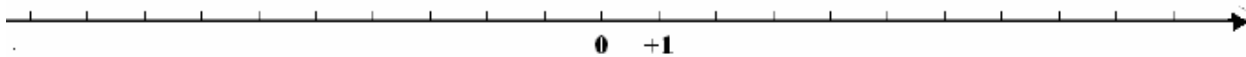
2. Plot -2 and 3, and then

```
├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──►
                        0    +1
```
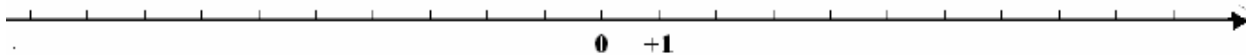
a) List two integers that are less than -2.

b) List two integers that are greater than 3.

c) List all integers that are greater than -2 but less than 3.

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1. Find the opposite number of the following numbers.

a) 12

b) -9

c) 0

2. Plot

a) 4 together with its opposite.
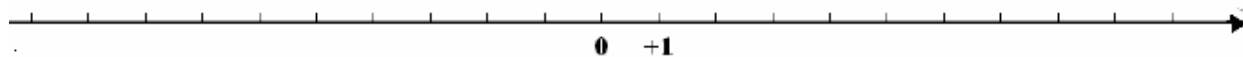
b) -5 together with its opposite.
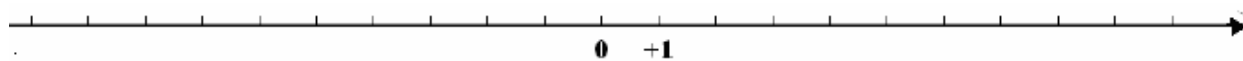
3. Among the following numbers, choose all pairs of opposite numbers.
   $-21, \quad 12, \quad -234, \quad -12, \quad 234, \quad 21, \quad -1, \quad +1$

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1. Write the corresponding numerical statements and evaluate them to answer the questions.

a) In the morning the temperature was -7 degrees. It is now warmer by 5 degrees. What is the temperature now?

b) In the morning the temperature was 2 degrees. It is now colder by 8 degrees. What is the temperature now?

c) In the morning the temperature was -4 degrees. It is now warmer by 10 degrees. What is the temperature now?

d) In the morning the temperature was -10 degrees. It is now colder by 9 degrees. What is the temperature now?

2. John's bank account was overdrawn. The status of his account was -100 dollars. He did not realize the problem and wrote another check for 25 dollars. What was the new status of John's account at this point? Please, write the corresponding numerical statement before giving the answer.

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1. A submarine was situated 800 feet below sea level. If it ascends (goes up) 200 feet, what is its new position? Write the corresponding numerical statement and evaluate it to answer the question.

2. A submarine was situated 100 feet below sea level. If it descends (goes down) 300 feet, what is its new position? Write the corresponding numerical statement and evaluate it to answer the question.

3. Answer the questions by writing the corresponding numerical statements and evaluate them.
.
a) John owed 5 dollars to his brother when his mother gave John 3 dollars. What is his total balance after repaying his brother?

b) Gail had 10 dollars when she went to a store and used her new credit card to buy a shirt for 30 dollars. What is her total net worth now?

c) Tom went to a store not having any money and bought one book for 10 dollars and another one for 12 dollars using his new credit card. What is his total balance now?

d) Rose owed 8 dollars to her sister when her dad gave her 10 dollars. What is her total balance after paying back her sister?

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1. Represent each of the following operation as a "movement on a number line" and then evaluate the expression
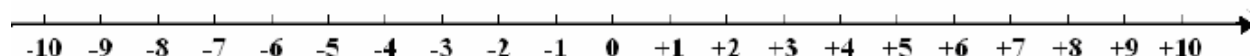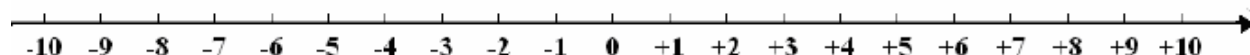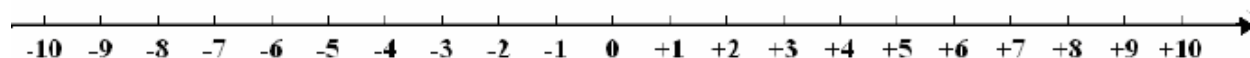
a) $3+5$
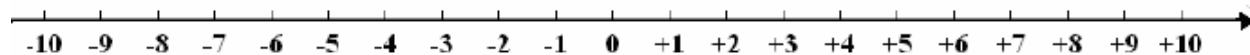
```
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0  +1  +2  +3  +4  +5  +6  +7  +8  +9  +10
```

b) $-3+5$

```
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0  +1  +2  +3  +4  +5  +6  +7  +8  +9  +10
```

c) $-3-5$

```
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0  +1  +2  +3  +4  +5  +6  +7  +8  +9  +10
```

d) $3-5$

```
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0  +1  +2  +3  +4  +5  +6  +7  +8  +9  +10
```

e) $5-5$

```
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0  +1  +2  +3  +4  +5  +6  +7  +8  +9  +10
```

f) $0-3$

```
  -10  -9  -8  -7  -6  -5  -4  -3  -2  -1   0  +1  +2  +3  +4  +5  +6  +7  +8  +9  +10
```

1. Perform the indicated operations. Please, use "=" sign correctly when writing your answer.

    a) $3-6$

    b) $-9-8$

    c) $0-11$

    d) $4-6$

    e) $-2+3$

    f) $4-4$

    g) $10-9$

    h) $8-10$

    i) $-2+5$

    j) $-10-7$

1. Perform the indicated operations. Please, use "=" sign correctly when writing your answer.

a) $13 - 15$

b) $-2 + 13$

c) $-10 - 5$

d) $9 - 8$

e) $0 - 0$

f) $-12 + 6$

g) $-14 + 15$

h) $3 - 12$

i) $-123 + 123$

j) $-17 - 3$

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1. Rewrite the following expressions without 'double signs' and then evaluate Please, use "=" sign correctly when writing your answer.

a) $-1+(-7)$

b) $2+(-16)$

c) $-5-(-3)$

d) $0-(+2)$

e) $14-(+5)$

f) $-10-(-11)$

g) $-25+(+25)$

h) $4+(-0)$

i) $9-(-7)$

j) $12-(+5)$

30

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1. Rewrite the following expressions without 'double signs' and then evaluate. Please, use "=" sign correctly when writing your answer.

a) $-9-(-3)$

b) $-4+(-13)$

c) $7+(+5)$

d) $18+(-7)$

e) $13-(+3)$

f) $-2-(-14)$

g) $9-(+18)$

h) $0+(-33)$

i) $13-(-6)$

j) $-10-(-9)$

1. Evaluate. Please, use "=" sign correctly when writing your answer.

    a) $-24+24$

    b) $-7-(-12)$

    c) $19-20$

    d) $-9+8$

    e) $-4-(+7)$

    f) $12-(-7)$

    g) $5+(-9)$

    h) $-3-(+10)$

    i) $7-14$

    j) $-1-16$

1. Fill in blanks using the following symbols '<", '>', '=' as appropriate.

a) -8 _____ 0

b) -7 _____ -12

2. Find the opposite number of -89.

3. Plot $-9, 7,$ on the number line.
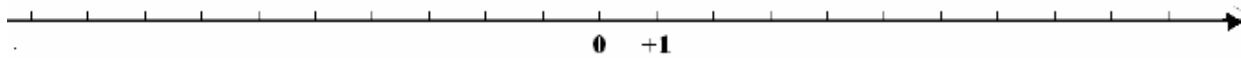
4. Perform the indicated operations. Please, use "=" sign when writing your answer.

a) $9 + (-5)$

b) $-18 + 8$

c) $-13 - (-4)$

d) $-3 - 17$

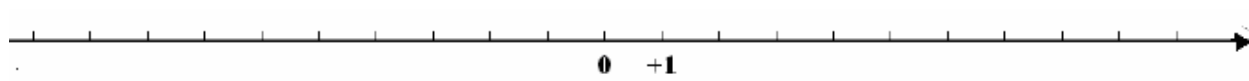1. Plot $-5, -1, 8$ on the number line.
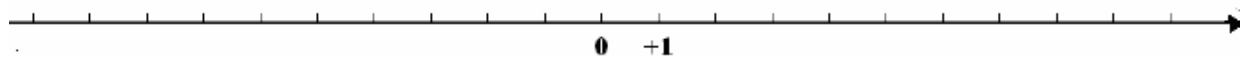
2. Fill in blanks using the following symbols '<", '>', '=' as appropriate.

a) -19 _____ -190

b) 1 ____ -19

3. Perform the indicated operations. Please, use "=" sign when writing your answer.

a) $-8+5$

b) $3-(+6)$

c) $-2-(-12)$

d) $0-7$

e) $11+(-2)$

1. Fill in blanks using the following symbols '<", '>', '=' as appropriate.

a) -9 _____ 9

b) -2 _____ -3

2. Plot -1 and 3, and then

a) list two numbers that are greater than 3.

b) list two numbers that are less than -1.

3. Perform the indicated operations. Please, use "=" sign when writing your answer.

a) $-2-5$

b) $7-12$

c) $-5+4$

d) $-3-(-4)$

e) $10+(-6)$

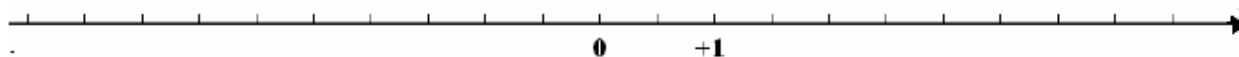1. Arrange the following integers in order from lowest to greatest.

$-2, \quad -5, \quad 0, \quad -7, \quad 3, \quad 10$

2. The marks are equally spaced on each of the following number lines. Plot 2 on each of the following number lines.

   a)
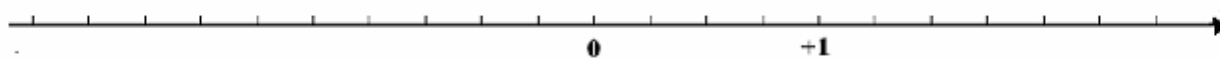
   b)

3. Perform the indicated operations. Please, use "=" sign when writing your answer.
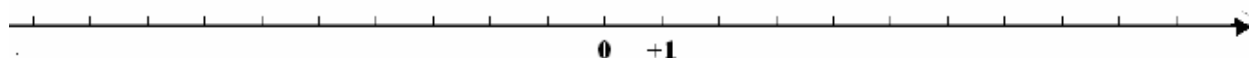
a) $0-0$

b) $3-(-7)$

c) $-8+(-5)$

d) $-14+4$

e) $-10-20$

1. Replace the star with a digit such that the inequality is true (more than one answer is possible).

   $34* > 348$

2. Find the opposite number to -6 and plot both numbers on the number line.

3. Write the corresponding numerical statement and evaluate it to answer the question.

In the evening the temperature was -3 degrees. It is now warmer by 8 degrees. What is the temperature now?

3. Perform the indicated operations. Please, use "=" sign when writing your answer.
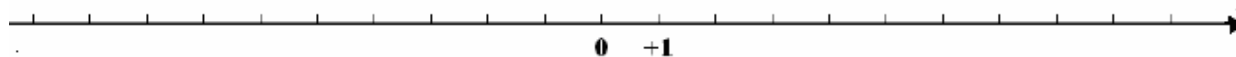
a) $7 - (-4)$

b) $12 - 14$

c) $-6 + (-1)$

d) $-5 - 8$

1. Plot $-7, 4, -3$ on the number line.

2. Write the opposite number to 53.

3. The gambler lost twice. First he lost 70 dollars and later, 50 dollars. Write the corresponding numerical statement and evaluate it to anawer the question how much money the gambler has after the two bets.

4. Perform the indicated operations. Please, use "=" sign when writing your answer.

a) $-59 + 59$

b) $-7 + 8$

c) $-9 - (-2)$

d) $0 + (-34)$

e) $-3 - (+4)$

1. Write the following numerical expressions as addition problems and then rewrite each of them in two different ways by changing the order of the terms. Indicate that all of the resulting expressions are equal to each other by placing "=" sign between them.

a) $-6+5-2$

b) $6-3-4+5$

2. For each of the following expressions (1)-(5) find an expression equal to it among expressions (A)-(E). Rewrite each matched pair with the equal sign between them to indicate their equivalence.

(1) $12+15+16$	(A) $-12-16-15$
(2) $-16+15+12$	(B) $15-16-12$
(3) $-15-16-12$	(C) $-16-15+12$
(4) $-16+15-12$	(D) $15+12+16$
(5) $12-16-15$	(E) $15+12-16$

3. Circle all expressions that are equal to $-7+2+15-1$.

a) $-7+2+15+1$

b) $15-1-7+2$

c) $-15-7+2-1$

d) $-1+15+2-7$

1. Perform the indicated operations. Please, use "=" sign correctly when writing your answer.

a) $-8+2+6$

b) $2-0-3$

c) $2-7-6$

d) $-2-9-4$

e) $4-13+6$

f) $10-20+30$

g) $-1+2-3$

h) $0+5-1$

i) $-10+4+20-30$

j) $-3-2+4-9$

1. Perform the indicated operations. Please, use "=" sign correctly when writing your answer.

a) $-23-23+23$

b) $7+8-9$

c) $1-9-3$

d) $-10-10-10$

e) $-4+6+2$

f) $5-9-2$

g) $0-2+3$

h) $9-10-5$

i) $8-9+7-8$

j) $-257+199+257-199$

1. Perform the indicated operations. Show all your steps and use "=" sign correctly when writing your answer.

a) $-(-3)+9+(-4)$

b) $-9+(+3)-(-5)$

c) $7+(-8)+10$

d) $5+(-2)-(-1)$

e) $-345-(-4)+345$

f) $-5+(-8)-9$

g) $0-(+5)+(-5)$

h) $-7+(-2)+(-1)-1$

1. Perform the indicated operations. Show all your steps and use "=" sign correctly when writing your answer.

a) $-8+(-4)+5$

b) $-1-(-1)+7$

c) $-(-3)-4-(+5)$

d) $4-(-4)+(-4)$

e) $-10-(-5)-1-1$

f) $-5-(-4)+2+(-6)$

g) $9+(-7)-(-12)-3$

h) $-8-(-10)+(-9)-2+5$

1. Perform the indicated operations. Show all your steps and use "=" sign correctly when writing your answer.

a) $-4-5-6$

b) $-20-30+(-40)$

c) $-3+7+7-10$

d) $-5-6+3$

e) $-(-5)-7+2+(-3)$

f) $-5+9-2-5+2$

g) $9+(-3)-(-5)-7+2$

h) $-3-(-4)+(-2)-(-6)+4$

1. Perform the indicated operations. Please, use "=" sign correctly when writing your answer.

a) $-4(-5)$

b) $100(-60)$

c) $-3(7)$

d) $-5(-9)$

e) $(-540)(1000)$

f) $9(-2)$

g) $(-5)(-7)$

h) $(-4)(6)$

1. Perform the indicated operations if possible, if not possible, write "not defined". Please, use "="
sign correctly when writing your answer.

a) $72 \div (-9)$

b) $\dfrac{18}{-9}$

c) $\dfrac{-56}{-8}$

d) $24 \div (-6)$

e) $120 \div 2$

f) $0 \div (-9)$

g) $-14 \div 14$

h) $-25 \div 0$

_____

1. Perform the indicated operations. Please, use "=" sign correctly when writing your answer.

a) $-2(-1)24$

b) $2(5)(-123)$

c) $-4(-4)(2)$

d) $-5(-2)(-3)$

e) $-9(3)(3)$

f) $-10(-10)(-22)(-1)$

2. Determine the sign of the answer. Do not evaluate!

a) $-2(13)(9)(-89)(-45)$

b) $4(12)(-1)(-6)(23)(-9)$

c) $-9(-2)(24)(-1)(-23)(-5)(-71)$

1. Write the following operations using mathematical symbols and then evaluate. Remember about placing parentheses when appropriate.

a) -7 multiplied by -9

b) The quotient of -49 and 7

c) The product of 458 and -10

d) The quotient of -27 and -3

e) 9 multiplied by -7

f) The product of 3, -4 and -10

g) The product of $-1, -1$ and -39

_____

1. Perform the indicated operations if possible. If not possible, write "not defined". Please, use "="
sign correctly when writing your answer.

a) $\dfrac{-30}{-5}$

b) $-9(-2)(100)$

c) $35 \div (-7)$

d) $-3(-2)(-2)$

e) $-18 \div 9$

f) $-3(-5)(-2)$

g) $-2(-2)(-2)(-10)$

2. Using the fact that factors of any product can be rearranged, write the following expression in two
different ways. Indicate that all of the resulting expressions are equal to each other by placing "="
sign between them.

  $-3(71)(-8)$

1. Write the following expressions as a product of $-1's$ and the number and evaluate them.

a) $-(-22)$

b) $-(-(-3))$

c) $-(-(-(-66)))$

2. Find the opposite of opposite of

a) 9

b) -5

3. Among the following numbers match all pairs of the opposite numbers.

$-21,\quad -(-22),\quad -(-(-(22))),\quad -(-34),\quad -78,\quad -(-(-21)),\quad -34,\quad -(-(-78))$

_____

1. Compare each the following two expressions and write '=' between them, if they are equal, or '≠' if the expressions are not equal.

a) $-5+3-8$ _____ $-5-8+3$

b) $12(-7)$ _____ $(-7)12$

c) $-8+6-2-4$ _____ $6-2-4+8$

d) $25 \div 5$ _____ $5 \div 25$

e) $(-7)(-6)(-13)$ _____ $-13(7)(6)$

f) $+3-2$ _____ $2-3$

g) $6-(-3)+(-1)$ _____ $6-3+1$

h) $-(-3)$ _____ $-1(-1)3$

1. Using the fact that factors of any product can be rearranged, write the following expression in two different ways. Indicate that all of the resulting expressions are equal to each other by placing "=" sign between them..

$$-5(-6)(-2)$$

2. Write the following operations using mathematical symbols and then evaluate.

13 divided by -13

3. Perform the indicated operations if possible. If not possible, write "not defined". Show all your steps and use "=" sign correctly when writing your answer.

a) $-1-2+4-6$

b) $-(-3)+(-2)-9$

c) $-4+5-(-2)-(+4)$

d) $-3(-5)$

e) $\dfrac{-5}{1}$

f) $(-2)(-1)(-1)(-1)$

1. Write the following numerical expression as addition problem and then rewrite it in two different additional ways by changing the order of terms of addition.   Indicate that all of the resulting expressions are equal to each other by placing "=" sign between them.

$$9 + 8 - 7$$

2. Write the following expression as a product of $-1's$ and a number and then evaluate it.

$$-(-(-2)) \; .$$

3. Perform the indicated operations if possible. If not possible, write "not defined". Show all your steps and use "=" sign correctly when writing your answer.

a) $-9 - 1 - 1$

b) $0 + (-3) - 7$

c) $(-9)(-8)$

d) $-28 \div 7$

e) $\dfrac{-12}{-12}$

f) $(-3)(100)(-8)$

1. Circle all expressions that are equal to $-3+4-7$.

$-3-4-7$ $-7-3+4$ $-4-3-7$ $+4-7-3$ $-7-3+4$

2. Write the following expression as a product of $-1's$ and a number and then evaluate it.
$$-(-(-67)) .$$

3. Perform the indicated operations if possible. If not possible, write "not defined". Show all your steps and use "=" sign correctly when writing your answer.

a) $-16 \div (-4)$

b) $(7)(-5)$

c) $-1(-1)(-1)$

d) $-1-1-1$

e) $-2-(-4)+(-7)$

f) $-(-5)+(-6)-(-4)$

1. Perform the indicated operations if possible. If not possible, write "not defined". Show all your steps and use "=" sign correctly when writing your answer.

a) $-2+9-5$

b) $-7-(-8)+(-3)$

c) $7(-9)$

d) $\dfrac{8}{0}$

e) $-4(-8)(10)$

f) $33 \div (-33)$

2. Write the following operation using mathematical symbols and then evaluate.
          The product of 4 and -2 , and -9

3. Compare each the following two expressions and write '=' between them, if they are equal, or '≠' if the expressions are not equal.

a) $8(-3)(-2)(-7)$ _____ $-8(3)(7)(2)$

b) $4-5+6$ _____ $-5+6-4$

1. Circle all expressions that are equal to $-19+71-56$.

$71-19-56$ $-56-19+71$ $71-56-19$ $-71+19-56$

2. Write the following operation using mathematical symbols and then evaluate. Remember about placing parentheses when appropriate.

The quotient of -12 and -4.

3. Perform the indicated operations if possible. If not possible, write "not defined". Show all your steps and use "=" sign correctly when writing your answer.

a) $-9+2-3$

b) $-7-4+5$

c) $2+(-4)-(-6)$

d) $-(-3)-7+1$

e) $-27(-1000)$

f) $-50\div10$

56

1. Write the following numerical expression as addition problems and then rewrite it in two different additional ways by changing the order of terms of addition. Indicate that all of the resulting expressions are equal to each other by placing "=" sign between them.

$-12+13-21+15$

2. Write the following operations using mathematical symbols and then evaluate.
        The product of -8 and -9

3. Write the following expression as a product of $-1's$ and a number and then evaluate it.
        $-(-9)$

4. Perform the indicated operations if possible. If not possible, write "not defined". Show all your steps and use "=" sign correctly when writing your answer.

a) $-7+8-9$

b) $-49 \div 7$

c) $-3(-5)(-2)$

d) $-3-(-4)+(-8)$

e) $\dfrac{-9}{0}$

1. Identify the base of the following expressions.

a) -12^{15}

b) $(-12)^{51}$

2. Write using exponential notation.

a) 99 squared.

b) -44 raised to the fourth power.

c) -11 cubed.

d) Exponential expression with power 7 and base -3.

3. Expand.

a) -11^3

b) $(-11)^4$

---

 1. Whenever possible, use exponential notation. Do not evaluate.

a) $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

b) $-7(-7)(-7)$

c) $3 \times 3 \times 3 \times 3 \times 4 \times 4 \times 4$

d) $-3 - 3 \times 3 \times 3 \times 3 \times 3$

e) $\dfrac{-5(-5)}{-5-5}$

f) $3 - 3(3)(3)(3)3 - 3$

g) $4 + 4 + 4 + 4 + 4 + 4$

h) $-5(-5)(-5) - 5 \times 5 \times 5 \times 5$

1. Evaluate the following expressions.

a) $(-7)^2$

b) -10^5

c) $(-1)^{22}$

d) -1^{22}

e) $(-489)^1$

f) $(-1)^{35}$

g) $-(-8)^2$

h) $-(-2)^5$

1. Determine the sign of the result. Please, do not evaluate.

a) $(-6)^4$

b) 6^{55}

c) $(-6)^9$

d) -6^8

e) $-(-88)^7$

f) $(-19)^{75}$

g) $-(-251)^8$

h) $(-(-22))^{35}$

1. Write each of the following as a numerical statement, and then evaluate it.

a) Add 3, -4 and -8.

b) 8 added to the product of 9 and -2.

c) Subtract 8 from 5, and then multiply the result by -7

d) The product of -2, -3 and 8.

e) -5 multiplied by the quotient of 12 and -6

f) Sum of 2 and -3 which then is raised to the fifty seventh power.

1. Name the first mathematical operation that should be performed according to the presumed order of operation and then evaluate the expression starting with this operation. Please, perform operations one step at a time and use equal signs correctly.

a) $(-1 \times 3)^4$

b) $8 - 16 \div (-2)$

c) $-2 - 8^2$

d) $-2 \times (-3) - 4$

e) $-3(-2)^3$

f) $-4 + 2(-6)$

g) $-4 \times 3 \div 6$

1. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $24 \div (-6) - 2$

b) $(-2 - 2)^3$

c) $-(6 - 8)^4$

d) $15 \div (-22 + 22)$

e) $\dfrac{7 - 7}{7(-7)}$

f) $(-100)(-9)^2$

g) $3 + 5 \times (-2)$

1. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $12 \div (-6) \times 2$

b) $\dfrac{3 - (-3)}{3 + (-3)}$

c) $-(-8)^2$

d) $(-2 - 6) \times 3$

e) $\dfrac{-3(-8)}{-6}$

f) $(-10)^5 \times 23$

g) $(4 - 6)(-2 - 3)$

1.   Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $1-(-4+7)$

b) $0\times(-23)-23$

c) $(2-7)\times(-10)$

d) $(-2-8)^5$

e) $\dfrac{-6^2}{3}$

f) $-(-5)+(-7)-2$

g) $(-6)(-2)(-1)+3$

---

1. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $-2(-4)+8$

b) $\dfrac{2-6}{-1-1}$

c) 3×4^2

d) $(-2+3)(-4)$

e) $-(-3)+(-4)-8$

f) $-(3-4)^{22}$

g) $-7+5(-2)$

1. Write using exponential notation " -9 raised to the twenty second power".

2. Whenever possible, use exponential notation. Do not evaluate.

$$(-7)(-7)(-7)-7$$

3. Evaluate the following expressions.

a) -8^2

b) $(-1)^{15}$

4. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $-4-(5-6)$

b) $-3(-5)^2$

c) $16 \div (-8) \times 4$

1. Identify the base and the exponent of the expression $(-2)^3$

2. Expand -4^3 and evaluate.

3. Evaluate the following expression.
$$-(-1)^{12}$$

4. Write the following as a numerical statement, and then evaluate it.
     Take the product of -3 and -10, and then add the result to 5.

5. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $8-(-9+2)$

b) $(-3+2)^{18}$

1. Whenever possible, use exponential notation. Please, do not evaluate.

$$2 - 2 \times 2 \times 2 \times 2 \times 2 + 2$$

2. Determine the sign of the result. Please, do not evaluate.

$$-14^6$$

3. Write the following as a numerical statement, and then evaluate it.

Subtract 7 from 6 and then raise the result to the fourteenth power.

4. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $(-2)(-9)(-100)$

b) $-3 + 2^4$

c) $-5 - (-2 + 6)$

1. Whenever possible, use exponential notation. Do not evaluate.

$(-4)(-4)(-4)(12)(12)(12)(12)$

2. Write each of the following as a numerical statement, and then evaluate it.
       Add 10 to the product of -2 and -10.

3 Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $-2^2 - 2$

b) $9 - (-3 \times 2)$

c) $(3 - 7) \div 4$

d) $(-4 - 6)^5$

1. Evaluate the following expression.

$-(-2)^3$

2. Determine the sign of the result. Please, do not evaluate.

-23^{47}

3. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $\dfrac{-3-5}{-2+2}$

b) $-(-6)-6^2$

c) $(-2-7)(5-7)$

_____

1. Expand

$(-7)^4$

2. Determine the sign of the result. Please, do not evaluate.

$(-75)^{14}$

3. Write each of the following as a numerical statement, and then evaluate it.

Raise -3 to the second power and then subtract the result from -2.

4. Evaluate, when possible. Please, perform operations one step at a time and use equal signs correctly. If an expression cannot be evaluated, write "not defined".

a) $\dfrac{-3}{-3} - 4$

b) $-24 \div (-2) \times 3$

c) $-5 - (-2 + 6)$

1. Identify the denominator and numerator in $\dfrac{89}{65}$.

a) Numerator:

b) Denominator:

2. Shade the area corresponding to the following fraction. Assume each figure represents one whole and parts are equal.   a) $\dfrac{5}{12}$ b) $\dfrac{7}{12}$
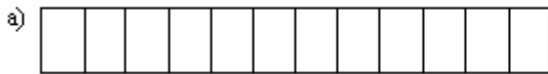
a) [figure: row of 12 empty squares]   b) [figure: row of 12 empty squares]

3. Which figure shows $\dfrac{1}{5}$?

A [figure: 5 squares, first shaded]

B [figure: 5 squares, first four shaded]

C [figure: 7 squares, first five shaded]

D [figure: 4 squares, first shaded]

4. Write a fraction represented by the shaded regions. Assume each figure represents one whole.

a) [figure: oval divided into four parts, two shaded]

b) [figure: square with X, bottom triangle shaded]

c) [figure: row of 8 squares, first three shaded]

d) [figure: row of 8 squares with some shaded]

_____

1. Write a fraction whose denominator is 6 and numerator is -11.

2. Shade the area corresponding to the following fraction. Assume each figure represents one whole and parts are equal.
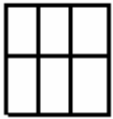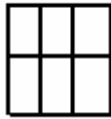
a) $\dfrac{1}{6}$ b) $\dfrac{5}{6}$ c) $\dfrac{6}{6}$
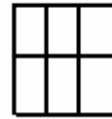
3. Which figure shows $\dfrac{1}{3}$ shaded? Assume each figure represents one whole.

5. Write a fraction represented by the shaded regions. Assume each figure represents one whole and parts are equal.
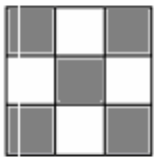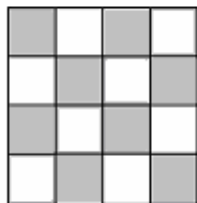
a)   b)   c)   d)
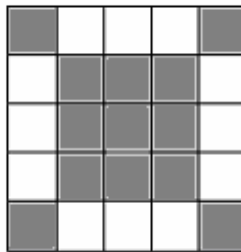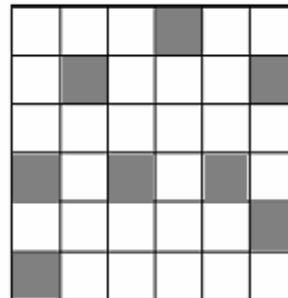
1. Write a fraction whose denominator is 45 and numerator is 16.

2. Circle the figure that is $\frac{2}{3}$ shaded?

a)

b)

c)

d)
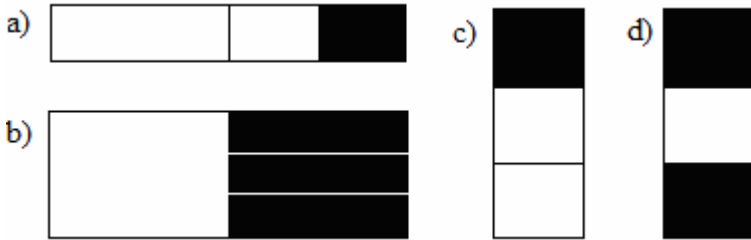
3. Point B is half way between A and C. D is half way between A and B.

A   D   B   C
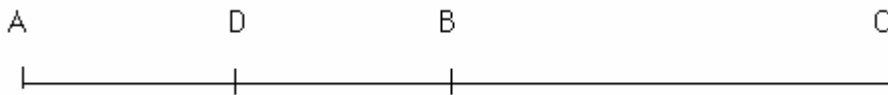
a) What fraction of the interval AC is the interval AD?

b) What fraction of the interval AC is the interval DB?

c) What fraction of the interval AC is the interval BC?

d) What fraction of the interval AB is the interval AD?

e) What fraction of the interval AB is the interval DB?

1. What fraction of balls is white?

2. What fraction of balls is NOT white?

3. What fraction of the following list are

      1 1 2 2   2   2 3 4 4 4 4 4 5

a) "1"s?

b) digits 4

4. There are 12 cars in the parking lot. 5 are white, 4 are silver and 3 are black.

a) What fraction of the cars is white?

b) What fraction of the cars is black?

c) What fraction of cars is NOT black?

5. Luisa visited 6 European, 7 South American and 1 African country.

a) What fraction of all of her visits are to South American countries?

b) What fraction of all her visits are NOT to European countries?

_____

1. One tenth of the population of town A earns more than $50000. There are 20 000 people living in this town. How many people living in town A earn more than $50000?

2. One eighth of my dresses are black. If I have 24 dresses, how many black dresses do I have?

3. Destiny has 6 coins in her pocket. If $\frac{1}{3}$ of them are quarters, how many quarters does Destiny have in her pocket?

4. There are 15 kids in a room. $\frac{2}{3}$ of them are 9 years old. How many kids in the room are 9 years old?

5. There are 12 glasses on a table. If $\frac{3}{4}$ of them are empty, how many empty glasses are on the table?

_____

1. Write the following fraction $\dfrac{9}{13}$ as a division problem using '÷' sign.

2 Rewrite in fraction form and express in either a positive or negative fraction.

a) $-13 \div (-19)$

b) $-2 \div 1347$

c) $87 \div (-53)$

3. If one unit is divided into 18 equal parts, and we count 3 such parts, what fraction is that?

4. If one unit is divided into 8 equal parts, and we count 17 such parts, what fraction is that?

5. How many fourths are equal to one whole?

6. How many tenths are equal to one whole?

_____

1. Write the following integers as fractions.

a) 8

b) −14

c) 0

2. Among the following fractions, select those that are integers and write them as integers, rather than fraction.

a) $\dfrac{45}{45}$

b) $-\dfrac{7}{1}$

c) $\dfrac{1}{5}$

d) $\dfrac{20}{5}$
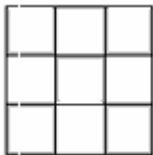
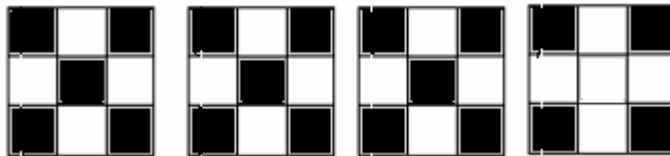e) $-\dfrac{567}{567}$

f) $\dfrac{17}{3}$

1. This is one unit
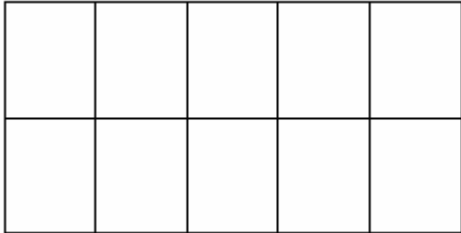
What fraction represents shaded area? Assume that parts are equal.
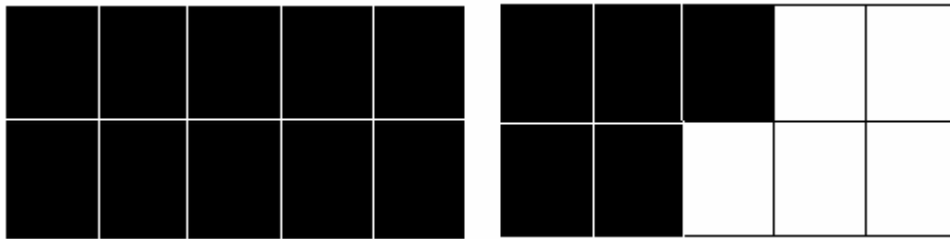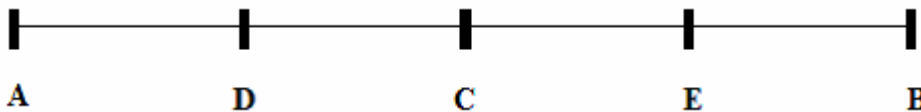

2. If this is one unit,

what fraction represents shaded area? Assume that parts are equal.

3. All marks are equally spaced. Assume, that the length of the segment AC represents one unit. Then, answer the following questions.

a) What fraction represents the length of AE?

b) What fraction represents the length of AB?

_____

1. For each fraction determine if it is more than, less than or equal to 1. Write your answer using "<", ">", or "=".

$$\frac{8}{7}$$ $$\frac{3}{9},$$

$$\frac{26}{26}$$ $$\frac{11}{15}$$

$$\frac{16}{5}$$ $$\frac{3}{4}$$

2. Replace X with an integer to make a true statement.

a) $\frac{X}{12}$ is less than 1.

b) $\frac{7}{X}$ is greater than 1.

c) $\frac{5}{X}$ is equal to 1

3. List two fractions that are less than 1 and two that are more than 1.

_____

1. Replace _____ with either "=" or "≠" sign to make a true statement.

a) $\dfrac{-2}{9}$ _____ $\dfrac{2}{-9}$

b) $\dfrac{-2}{7}$ _____ $\dfrac{-2}{-7}$

c) $-\dfrac{3}{14}$ _____ $\dfrac{3}{-14}$

d) $-\dfrac{5}{12}$ _____ $\dfrac{-5}{-12}$

e) $-\dfrac{1}{6}$ _____ $\dfrac{-1}{6}$

f) $-\dfrac{9}{12}$ _____ $\dfrac{-9}{-12}$

g) $\dfrac{3}{4}$ _____ $-\left(\dfrac{3}{4}\right)$

h) $\dfrac{3}{7}$ _____ $\dfrac{-3}{-7}$

2. Find the opposite of $\dfrac{7}{9}$ and write it in three different ways by placing the minus sign differently.

3. Write the following division problem $-13 \div (-14)$ using fraction notation and then evaluate it.

4. Circle all proper fractions.

$\dfrac{13}{103}$ $\dfrac{5}{5}$ $\dfrac{6}{1}$ $\dfrac{12}{21}$ $\dfrac{8}{8}$

1. Name three equivalent fractions to $\dfrac{2}{5}$.

2. The following pairs of fractions are equal (equivalent). Show that, indeed, they are equivalent by finding a number by which the numerator and denominator of the first fraction was multiplied or divided in order to get the second fraction.

$\dfrac{7}{8} = \dfrac{21}{24}$

$-\dfrac{6}{5} = \dfrac{-42}{35}$

$\dfrac{40}{80} = \dfrac{4}{8}$

3. Among the following, find all fractions that are equivalent (equal) to $\dfrac{1}{4}$. Explain how you reached your answer.

$\dfrac{3}{12}$

$\dfrac{-1}{-4}$

$\dfrac{100}{400}$

$\dfrac{4}{1}$

1. Reduce the following fractions.

a) $\dfrac{12}{24}$

b) $\dfrac{27}{18}$

c) $-\dfrac{60}{70}$

d) $\dfrac{24}{36}$

e) $\dfrac{-16}{24}$

f) $\dfrac{4}{30}$

g) $-\dfrac{25}{5}$

1. Find the missing numerator.

a) $\dfrac{2}{7} = \dfrac{}{700}$

b) $\dfrac{3}{15} = \dfrac{}{5}$

c) $\dfrac{1}{6} = \dfrac{}{48}$

d) $\dfrac{8}{9} = \dfrac{}{81}$

e) $-\dfrac{7}{4} = -\dfrac{}{28}$

2. Find a fraction with the denominator 15 that is equivalent to $\dfrac{3}{5}$.

3. Find a fraction with the denominator 45 that is equivalent to $\dfrac{4}{9}$.

4. Find a fraction with the denominator 64 that is equivalent to $-\dfrac{7}{8}$.

1. Which of the following expressions can be simplified by canceling number 5? Any time 5 can be cancelled, cancel it.

a) $\dfrac{5}{3 \times 5}$

b) $\dfrac{5}{5 + 7}$

c) $\dfrac{-7(5)}{5}$

d) $\dfrac{-5 \times 7}{3 \times 5}$

e) $\dfrac{5 - 7}{5 \times 5}$

f) $\dfrac{5 \div (-3)}{5}$

g) $\dfrac{5}{5}$

1. Name the fraction represented by the shaded region. Assume each figure represents one whole and parts are equal.
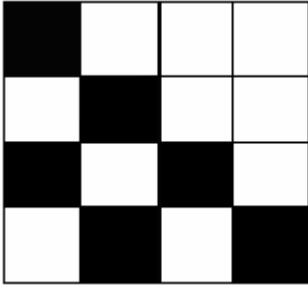
2. Tom had 15 candies. On Monday he ate $\dfrac{2}{5}$ of his candies. How many candies did Tom eat?

3 Find the missing numerator $\dfrac{7}{3} = \dfrac{}{15}$

4. Reduce the following fraction $\dfrac{18}{6}$

5. Find the missing numerator to make a true statement.

a) $\dfrac{}{28}$ is less than 1.

b) $\dfrac{}{13}$ is greater than 1.

6. Write the following division problem $-7 \div (-8)$ using fraction notation and then evaluate it.

7. Write $-\dfrac{2}{9}$ in two different equivalent forms.

8. Circle all improper fractions $\dfrac{7}{8}$ $\dfrac{9}{9}$ $\dfrac{3}{7}$ $\dfrac{12}{55}$

1. How many halves are equal to one whole?

2. Jessica has \$90. She spent $\dfrac{2}{3}$ of her money on theater tickets. How much money did the tickets cost?
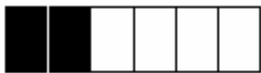
3. If this is one unit

What fraction represents the shaded area? Assume that parts are equal.
a)   b)

4. Among the following fractions, select those that are integers and write them as integers.

a) $\dfrac{1}{4}$

b) $\dfrac{27}{27}$

c) $-\dfrac{4}{4}$

5 Find a fraction with the denominator 900 that is equivalent to $\dfrac{23}{9}$.

6. Reduce the following fraction $\dfrac{40}{48}$.

7. Write $\dfrac{1}{100}$ in two different equivalent forms (with different denominators).

1. What fraction of the following rectangles is black?

2. Shade the area corresponding to the following fraction $\dfrac{7}{12}$. Assume each figure represents one whole and parts are equal.

3. There are 20 DVD's on a shelf. Exactly 7 of them are foreign movies. What fraction of the DVD's on the shelf are foreign movies?

4. Replace _____ with either "=" or "$\neq$" sign to make a true statement:

a) $\dfrac{-1}{7}$ _____ $\dfrac{1}{-7}$

b) $-\dfrac{1}{7}$ _____ $\dfrac{-1}{-7}$

5 Find the missing numerator $\dfrac{2}{5} = \dfrac{}{25}$

6. Reduce the following fractions

a) $-\dfrac{12}{6}$

b) $\dfrac{20}{32}$

7. Which of the following expressions can be simplified by canceling number 2? Any time 2 can be cancelled, cancel it.

a) $\dfrac{2+5}{2}$

b) $\dfrac{2}{2}$

_____

1. Write the fraction represented by the shaded region. Assume each figure represents one whole and parts are equal.

2. There are 2 apple trees, 3 pear trees, and 7 orange trees in an orchard. What fraction of those fruit trees are orange trees?

3 Find the missing numerator $\dfrac{5}{3} = \dfrac{}{9}$

4. Reduce the following fractions.

a) $\dfrac{16}{24}$

b) $-\dfrac{36}{9}$

5. Replace _____ with either "=" or "≠" sign to make a true statement.

a) $-\dfrac{3}{5}$ _____ $\dfrac{3}{-5}$

b) $\dfrac{12}{-13}$ _____ $\dfrac{-12}{13}$

6. Which of the following expressions can be simplified by canceling number 5? Any time 5 can be cancelled, cancel it.
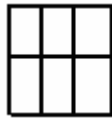
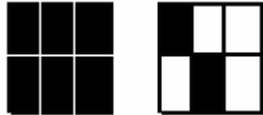a) $-\dfrac{5 \times 3}{7 \times 5}$

b) $\dfrac{5}{1-5}$

1. C is right in the middle of the interval AB. What fraction of interval AB is the interval CB?

A　　　　　　　　　　　　C　　　　　　　　　　　B
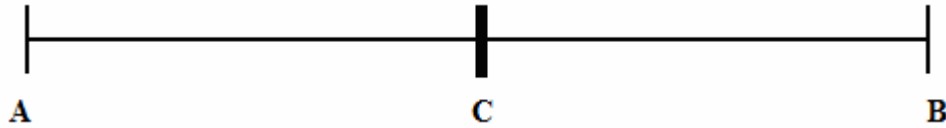
2. This is one unit

What fraction represents the shaded area? Assume that parts are equal.

3. Are the following fractions equivalent. If yes, explain why.

$$\frac{14}{35} \quad \text{and} \quad \frac{2}{5}$$

4 Find the missing numerator.

$$-\frac{1}{9} = \frac{\quad}{-18}$$

5. Reduce the following fraction $\dfrac{36}{48}$

6. Find the opposite of $\dfrac{1}{4}$ and write it in three different ways by placing minus sign differently.

7. Write 7 in three different equivalent forms as a fraction.

1. What fraction of the following collection are hearts?

♥♥♥♥♥ ☺ ☺ ☺ ☺ ☺

2. The following pairs of fractions are equal (equivalent). Show that, indeed, they are equivalent by finding a number by which the numerator and denominator of the first fraction was multiplied or divided in order to get the second fraction.

a) $\dfrac{36}{42} = \dfrac{6}{7}$

b) $-\dfrac{4}{5} = -\dfrac{16}{20}$

3. Nick has to wash 10 plates. He already washed $\dfrac{1}{5}$ of them. How many plates did Nick wash?

4. Shade the area corresponding to the following fraction $\dfrac{3}{10}$. Assume each figure represents one whole and parts are equal.

5. Write 7 as a fraction.

6. Circle fractions that are greater then 1. $\dfrac{7}{8}$ $\dfrac{9}{9}$ $\dfrac{1}{3}$ $\dfrac{12}{11}$ $\dfrac{20}{4}$.

7. Find the opposite of $\dfrac{2}{9}$ and write it in three different ways by placing minus sign differently.

8 Find the missing numerator $\dfrac{4}{5} = \dfrac{}{45}$

9. Reduce the following fraction $\dfrac{24}{30}$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{1}{4} \times \dfrac{7}{3}$

b) $-\dfrac{4}{7} \times \dfrac{2}{9}$

c) $\dfrac{1}{4} x \left(-\dfrac{9}{5} \right)$

d) $\left(-\dfrac{8}{5} \right) \left(\dfrac{4}{3} \right)$

e) $\left(-\dfrac{21}{4} \right) \left(-\dfrac{5}{6} \right)$

f) $\dfrac{41}{3} x \dfrac{10}{9}$

g) $\dfrac{5}{4} x \left(-\dfrac{9}{7} \right)$

h) $\left(-\dfrac{6}{7} \right) \left(-\dfrac{3}{11} \right)$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{18}{7} \times \dfrac{4}{27}$

b) $-\dfrac{8}{3} \times \dfrac{9}{12}$

c) $\dfrac{6}{8} \times \left(\dfrac{-20}{3} \right)$

d) $\left(-\dfrac{20}{3} \right)\left(\dfrac{21}{10} \right)$

e) $\dfrac{36}{2} \times \left(-\dfrac{4}{9} \right)$

f) $\left(-\dfrac{5}{3} \right)\left(-\dfrac{19}{10} \right)$

g) $-\dfrac{24}{5} \times \dfrac{10}{9}$

h) $\left(-\dfrac{10}{7} \right)\left(-\dfrac{14}{5} \right)$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $7\left(-\dfrac{2}{11}\right)$

b) $-6\times\left(\dfrac{4}{5}\right)$

c) $-7\times\dfrac{1}{7}$

d) $-3\times\dfrac{4}{15}$

e) $\dfrac{-8}{9}\times(-5)$

f) $28\times\dfrac{23}{21}$

g) $\dfrac{4}{5}\times15$

h) $\left(\dfrac{4}{-13}\right)\times4$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $-8 \times \dfrac{15}{6} \times \dfrac{1}{45}$

b) $-\dfrac{16}{7} \times \dfrac{1}{6} \times \left(\dfrac{-3}{24} \right)$

c) $\dfrac{-5}{9} \times \left(-\dfrac{10}{7} \right) \times \left(-\dfrac{9}{8} \right)$

d) $\left(-\dfrac{1}{2} \right) \left(\dfrac{1}{25} \right) (-5)$

e) $\dfrac{1}{12} \times \left(\dfrac{-8}{7} \right) \times \left(\dfrac{7}{6} \right)$

f) $\dfrac{81}{2} x \dfrac{10}{9} \times \left(-\dfrac{4}{5} \right) \times \dfrac{1}{2}$

_____

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $-2 \times \dfrac{7}{8}$

b) $\dfrac{28}{5} \times \left(-\dfrac{3}{18}\right)$

c) $23 \times \dfrac{5}{23}$

d) $\dfrac{1}{8} \times \left(-\dfrac{40}{7}\right)$

e) $\dfrac{-2}{3} \times (-7)$

f) $-\dfrac{5}{6} \times \left(-\dfrac{12}{5}\right)$

g) $-\dfrac{2}{18} \times \left(\dfrac{30}{4}\right)$

h) $\left(\dfrac{2}{-5}\right) \times 30 \times \dfrac{1}{6}$

1. Whenever possible use the exponential notation.

a) $\left(-\dfrac{1}{12}\right)\left(-\dfrac{1}{12}\right)\left(-\dfrac{1}{12}\right)\left(-\dfrac{1}{12}\right)$

b) $-\left(\dfrac{1}{12}\right)\left(\dfrac{1}{12}\right)\left(\dfrac{1}{12}\right)\left(\dfrac{1}{12}\right)$

c) $-\left(\dfrac{1}{9}\right)\left(\dfrac{1}{9}\right)\left(-\dfrac{4}{5}\right)\left(-\dfrac{4}{5}\right)\left(-\dfrac{4}{5}\right)$

d) $\left(-\dfrac{2}{5}\right)\left(-\dfrac{2}{5}\right)\left(-\dfrac{2}{5}\right)\div\left(\dfrac{2}{7}\right)\left(\dfrac{2}{7}\right)$

2. Expand, that is write without exponential notation. Do not evaluate.

a) $\left(\dfrac{2}{5}\right)^3$

b) $\dfrac{2^3}{5}$

c) $\left(-\dfrac{2}{5}\right)^3$

1. Perform the indicated operations.

a) $\left(-\dfrac{3}{4}\right)^2$

b) $-\left(\dfrac{3}{100}\right)^3$

1. Find the reciprocal of the following numbers.

a) $\dfrac{2}{7}$

b) $\dfrac{-9}{5}$

c) 4

d) $-\dfrac{14}{15}$

e) -6

f) $\dfrac{1}{-3}$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{3}{7} \div \dfrac{21}{5}$

b) $-\dfrac{1}{8} \div \dfrac{3}{4}$

c) $\dfrac{15}{4} \div \left(-\dfrac{10}{3}\right)$

d) $\left(-\dfrac{12}{7}\right) \div \left(\dfrac{-16}{35}\right)$

e) $\left(-\dfrac{15}{4}\right) \div \left(\dfrac{10}{6}\right)$

f) $-\dfrac{3}{8} \div \dfrac{0}{3}$

g) $\left(-\dfrac{36}{19}\right) \div \left(-\dfrac{1}{19}\right)$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

.

a) $13 \div \dfrac{2}{3}$

b) $-9 \div \dfrac{7}{3}$

c) $\dfrac{28}{5} \div (-21)$

d) $\left(-\dfrac{1}{7}\right) \div 2$

e) $(-1) \div \left(-\dfrac{3}{8}\right)$

f) $\dfrac{5}{9} \div (-25)$

1. <mark>Perform the following operations, if possible. Otherwise, write "not defined". Show all your steps and use "=" sign correctly.</mark>

a) $\dfrac{7}{\dfrac{2}{3}}$

b) $\dfrac{-\dfrac{4}{9}}{\dfrac{2}{15}}$

c) $\dfrac{-\dfrac{5}{24}}{-\dfrac{25}{22}}$

d) $\dfrac{-\dfrac{4}{3}}{\dfrac{36}{21}}$

e) $\dfrac{\dfrac{10}{3}}{-5}$

f) $\dfrac{-\dfrac{9}{11}}{\dfrac{18}{5}}$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $-\dfrac{4}{5} \div \left(-\dfrac{2}{3}\right)$

b) $-39 \times \left(-\dfrac{9}{39}\right)$

c) $\dfrac{-\dfrac{7}{8}}{-7}$

d) $\dfrac{\dfrac{12}{9}}{\dfrac{-6}{27}}$

e) $(-5) \div \left(-\dfrac{35}{2}\right)$

f) $-\left(-\dfrac{2}{3}\right)^{3}$

g) $-4\left(-\dfrac{35}{12}\right) \times \left(-\dfrac{2}{7}\right)$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{16}{7} \div (-24)$

b) $\dfrac{-8}{\dfrac{3}{5}}$

c) $\dfrac{-7^2}{9}$

d) $-\dfrac{2}{7} \div \dfrac{0}{4}$

e) $-6 \times \dfrac{11}{30}$

f) $\left(-\dfrac{36}{27}\right)\left(-\dfrac{9}{30}\right)$

g) $\left(-\dfrac{4}{9}\right)\left(-\dfrac{6}{8}\right)$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{2}{9} \div (-2)$

b) $\dfrac{9}{11} \times (-22)$

c) $2 \times \dfrac{5}{0}$

d) $\dfrac{-\dfrac{3}{8}}{-9}$

e) $\left(-\dfrac{237}{7}\right)\left(-\dfrac{1}{145}\right)\left(\dfrac{145}{237}\right)$

f) $-\dfrac{1}{15} \times \left(-\dfrac{5}{8}\right) \times 6 \times \left(-\dfrac{1}{12}\right)$

1. Write the following statement using the correct mathematical language and then evaluate them.

a) The product of $\dfrac{3}{11}$ and -9.

b) The quotient of $-\dfrac{2}{13}$ and $\dfrac{9}{26}$.

c) The product of $-\dfrac{4}{5}$ and $-\dfrac{20}{7}$.

d) The quotient of -4 and $\dfrac{1}{9}$.

e) The quotient of $-\dfrac{2}{3}$ and $-\dfrac{10}{9}$.

f) The product of $\dfrac{8}{40}, -3,$ and $-\dfrac{15}{8}$

g) The product of $-\dfrac{18}{8}, -\dfrac{3}{4},$ and $-\dfrac{2}{9}$.

h) $-\dfrac{4}{5}$ squared.

1. Write the following statement using the correct mathematical language and then evaluate it.

The product of $-\dfrac{7}{9}$ and -3.

2. Write using exponential notation whenever possible $\dfrac{5}{9}\times\dfrac{5}{9}\times\dfrac{5}{9}+\dfrac{2}{7}\times\dfrac{2}{7}$.

3. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{2}{9}\div\left(-\dfrac{9}{15}\right)$

b) $-\dfrac{7}{2}\times 0$

c) $-\dfrac{3}{14}\times\dfrac{21}{5}$

d) $\dfrac{-\dfrac{2}{3}}{8}$

e) $\left(-\dfrac{4}{7}\right)\left(-\dfrac{3}{4}\right)\left(-\dfrac{1}{3}\right)$

1. Write the following statement using the correct mathematical language and then evaluate it.

a) The quotient of $\dfrac{2}{10}$ and $-\dfrac{9}{100}$.

b) $-\dfrac{2}{7}$ squared.

2. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{2}{9} \div \left(-\dfrac{6}{45}\right)$

b) $-\dfrac{9}{20} \times (-2)$

c) $0 \div \dfrac{5}{7}$

d) $\dfrac{-\dfrac{3}{45}}{\dfrac{4}{5}}$

e) $\left(-\dfrac{3}{16}\right)\left(-\dfrac{1}{3}\right)\left(\dfrac{12}{5}\right)$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $4 \div \dfrac{2}{9}$

b) $3 \times \dfrac{2}{9} \times (-1)$

c) $-\dfrac{4}{7} \times \dfrac{5}{12}$

d) $\dfrac{7}{-\dfrac{2}{7}}$

e) $\left(-\dfrac{2}{18}\right) \div \left(\dfrac{-4}{36}\right)$

f) $-\dfrac{160}{5} \times \dfrac{5}{16}$

2. Expand. Do not evaluate.

$-\left(\dfrac{6}{5}\right)^{4}$

1. Write the following statement using the correct mathematical language and then evaluate it. The product of $\dfrac{-4}{7}$ and $-\dfrac{28}{5}$.

2. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $\dfrac{2}{19} \times \left(-\dfrac{19}{4} \right)$

b) $-\dfrac{9}{4} \times (-3)$

c) $7 \div \dfrac{2}{5}$

d) $\dfrac{27}{12} \times 6 \times \left(-\dfrac{7}{18} \right)$

e) $-\dfrac{6^2}{13}$

1. Write the following statement using the correct mathematical language and then evaluate it.

The product of $-5, -\dfrac{3}{15},$ and $-\dfrac{3}{7}.$

2. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $-\dfrac{1}{7} \div (-1)$

b) $\left(-\dfrac{2}{7}\right)\left(-\dfrac{1}{12}\right)$

c) $\dfrac{-\dfrac{3}{8}}{\dfrac{2}{8}} \; 3$

d) $\dfrac{4}{27}\left(-\dfrac{9}{16}\right)$

e) $\left(-\dfrac{2}{5}\right)^{3}$

1. Perform the following operations, if possible. Otherwise, write "undefined". Show all your steps and use "=" sign correctly.

a) $-4 \times \dfrac{3}{4}$

b) $\dfrac{1}{45} \times \dfrac{35}{7}$

c) $\dfrac{-\dfrac{1}{3}}{-\dfrac{3}{5}}$

d) $\left(-\dfrac{12}{5}\right)\left(-\dfrac{15}{18}\right)$

e) $\left(-\dfrac{12}{13}\right) \div 4$

2. Rewrite the following expression using the exponential notation whenever possible.

$\dfrac{4}{7} \times \dfrac{4}{7} \times \dfrac{4}{7} \times \dfrac{4}{7} \times \dfrac{3}{8} \times \dfrac{3}{8} \times \dfrac{3}{8} + \dfrac{3}{8}$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{3}{17}+\dfrac{14}{17}$

b) $\dfrac{3}{7}+\dfrac{5}{7}$

c) $\dfrac{7}{8}+\dfrac{3}{8}$

d) $\dfrac{5}{2}+\dfrac{7}{2}+\dfrac{3}{2}$

e) $\dfrac{13}{5}+\dfrac{5}{5}+\dfrac{2}{5}$

1. If somebody asks you to count by 2 starting from 0 up to 10, you start with 0 and in each consecutive step you add 2 to the previous number. Once you reach number 10, you are done: 0, 2, 4, 6, 8, 10.

a) Count by $\dfrac{1}{3}$ starting from 0 up to 4. Any time you get a fraction that is an integer, write it as such $(0, \dfrac{1}{3}, \dfrac{2}{3}, 1, \dfrac{4}{3}, \text{etc.})$.

b) Count by $\dfrac{1}{5}$ starting from 0 up to 3. Any time you get a fraction that is an integer, write it as such:

c) Count backwards by $\dfrac{1}{2}$ (which means you will subtract $\dfrac{1}{2}$ in each step) starting from 4 and ending at -4. Any time you get a fraction that is an integer, write it as such .$(4, \dfrac{7}{2}, 3, \dfrac{5}{2} \text{etc.})$:

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{-4}{7} + \dfrac{13}{7}$

b) $-\dfrac{3}{8} + \dfrac{5}{8}$

c) $\dfrac{11}{18} - \dfrac{-7}{18}$

d) $-\dfrac{-21}{9} - \dfrac{21}{9}$

e) $-\dfrac{5}{6} - \dfrac{7}{6} + \dfrac{10}{6}$

f) $-\dfrac{-9}{100} + \dfrac{-3}{100} - \dfrac{7}{100}$

g) $-\dfrac{7}{9} - \dfrac{-2}{9} + \dfrac{1}{9}$

h) $-\dfrac{9}{4} - \dfrac{7}{4} + \dfrac{5}{4} + \dfrac{-3}{4}$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{3}{2}+\dfrac{1}{7}$

b) $\dfrac{7}{12}+\dfrac{3}{8}$

c) $\dfrac{3}{5}+\dfrac{2}{9}$

d) $\dfrac{5}{6}+\dfrac{1}{10}$

e) $\dfrac{3}{12}+\dfrac{15}{24}+\dfrac{3}{8}$

f) $\dfrac{2}{3}+\dfrac{3}{4}+\dfrac{5}{6}$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-\dfrac{1}{6}-\dfrac{3}{4}$

b) $-\dfrac{2}{5}+\dfrac{11}{20}$

c) $\dfrac{5}{6}-\dfrac{3}{10}$

d) $\dfrac{4}{-9}-\dfrac{3}{8}$

e) $-\dfrac{6}{7}+\dfrac{3}{5}$

f) $\dfrac{5}{4}-\dfrac{3}{8}-\dfrac{1}{6}$

g) $\dfrac{45}{73}-\dfrac{12}{13}-\dfrac{45}{73}-\dfrac{12}{13}$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{5}{6} + \left(-\dfrac{3}{5} \right)$

b) $-\dfrac{5}{8} - \left(\dfrac{-1}{6} \right)$

c) $\dfrac{3}{7} - \left(+\dfrac{9}{2} \right)$

d) $-\dfrac{5}{8} - \dfrac{-1}{9}$

e) $-\left(-\dfrac{3}{10} \right) - \left(-\dfrac{2}{7} \right)$

f) $-\dfrac{1}{7} - \left(-\dfrac{11}{28} \right) + \left(-\dfrac{3}{14} \right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-\dfrac{1}{4}+\dfrac{-3}{7}$

b) $-\dfrac{2}{13}+\left(-\dfrac{7}{26}\right)$

c) $-\left(-\dfrac{1}{3}\right)-\dfrac{2}{7}$

d) $-\dfrac{2}{9}-\dfrac{-7}{12}$

e) $\dfrac{-4}{7}-\dfrac{2}{5}$

f) $-\dfrac{7}{8}+\left(-\dfrac{7}{8}\right)$

g) $-\dfrac{-2}{9}-\left(\dfrac{7}{-4}\right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{-3}{4} + \dfrac{3}{16}$

b) $-\dfrac{7}{8} + \left(-\dfrac{2}{9}\right)$

c) $-\left(-\dfrac{1}{6}\right) + \left(-\dfrac{3}{8}\right)$

d) $\left(-\dfrac{5}{4}\right) - \left(-\dfrac{2}{3}\right)$

e) $-\dfrac{14}{15} - \dfrac{3}{5} - \left(\dfrac{-2}{3}\right)$

f) $\dfrac{1}{4} - \left(+\dfrac{7}{6}\right) - \left(-\dfrac{3}{8}\right)$

g) $\dfrac{5}{-9} - \left(-\dfrac{2}{7}\right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-\dfrac{3}{7}-\dfrac{1}{8}$

b) $-\dfrac{2}{3}-\left(-\dfrac{5}{12}\right)$

c) $-\left(-\dfrac{3}{5}\right)+\left(-\dfrac{1}{2}\right)$

d) $-\dfrac{-5}{4}+\left(-\dfrac{2}{7}\right)$

e) $\dfrac{-3}{17}-\left(+\dfrac{4}{17}\right)-\left(\dfrac{-8}{17}\right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{-5}{12} + \dfrac{-7}{12}$

b) $-\dfrac{2}{3} + \left(-\dfrac{1}{4}\right)$

c) $-\left(-\dfrac{5}{14}\right) - \left(-\dfrac{2}{7}\right)$

d) $\dfrac{1}{3} + \dfrac{7}{6} - \dfrac{3}{3}$

e) $-\dfrac{-7}{11} - \left(\dfrac{7}{11}\right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{3}{15} + \dfrac{7}{15} + \dfrac{5}{15}$

b) $\dfrac{2}{7} + \dfrac{1}{6}$

c) $-\dfrac{2}{3} - \dfrac{1}{5}$

d) $-\dfrac{7}{8} + \left(-\dfrac{3}{4}\right)$

e) $-\left(-\dfrac{1}{4}\right) + \left(-\dfrac{5}{6}\right) - \left(+\dfrac{2}{3}\right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{-9}{14}+\dfrac{3}{14}-\dfrac{5}{14}$

b) $\dfrac{3}{10}-\left(-\dfrac{7}{15}\right)$

c) $-\dfrac{3}{2}+\left(-\dfrac{2}{5}\right)$

d) $-\left(-\dfrac{1}{6}\right)+\left(-\dfrac{2}{3}\right)$

e) $-\dfrac{-2}{3}-\left(\dfrac{7}{-6}\right)+\dfrac{5}{3}$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\dfrac{2}{5} + \dfrac{1}{3}$

b) $-\dfrac{5}{12} + \dfrac{1}{5}$

c) $-\dfrac{2}{7} - \left(-\dfrac{4}{21}\right)$

d) $-\dfrac{7}{-12} - \dfrac{-1}{6}$

e) $-\dfrac{3}{100} - \left(-\dfrac{7}{10}\right) + \dfrac{3}{100}$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-\dfrac{6}{7}+\dfrac{-8}{7}$

b) $\dfrac{7}{12}-\left(-\dfrac{3}{8}\right)$

c) $-\left(-\dfrac{1}{3}\right)+\left(-\dfrac{2}{9}\right)$

d) $\dfrac{3}{4}-\left(-\dfrac{5}{2}\right)+\left(-\dfrac{5}{6}\right)$

e) $-\dfrac{25}{43}+\dfrac{3}{17}-\dfrac{3}{17}+\dfrac{25}{43}$

1. Perform the indicated operations, if possible. If not possible, write "not possible". Perform *one operation at a time*. Show all your steps. Use correctly "=" sign. Always reduce the answer.

a) $\left(-\dfrac{2}{24}\right) \div \left(-\dfrac{3}{8}\right) + \dfrac{1}{2}$

b) $-\left(-\dfrac{3}{2} \times \dfrac{1}{3}\right)^{4}$

c) $\left(\dfrac{20}{9}\right) \div \left(-\dfrac{10}{3}\right) \times (-4)$

d) $-\dfrac{7}{4} - \left(-\dfrac{3}{2}\right)^{2}$

e) $\dfrac{7}{5} \times \left(-\dfrac{1}{2}\right) - \dfrac{2}{3}$

f) $9 \div \left(\dfrac{2}{7} - \dfrac{4}{5}\right)$

1. Name the operation that has to be performed first according to the order of operations. Then evaluate the expressions performing *one operation at a time.* Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $\dfrac{9}{5} \times \left(-\dfrac{10}{12} \right) - \dfrac{2}{3}$

b) $\dfrac{9}{8} \div \left(-\dfrac{6}{5} - \dfrac{3}{4} \right)$

c) $-\left(-\dfrac{8}{7} \right) - \dfrac{1}{7} \div (-1)$

d) $-\dfrac{3}{5} \div \left(-3 \times \dfrac{3}{5} \right)$

e) $\dfrac{\left(\dfrac{2}{7} \right)^2}{-\dfrac{5}{8} + \dfrac{5}{8}}$

f) $\left(\dfrac{1}{4} + \dfrac{4}{5} \right) \times 4$

1. Name the operation that has to be performed first according to the order of operations. Then evaluate the expressions performing *one operation at a time*. Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $\left(\dfrac{1}{6}+\dfrac{1}{3}\right)\times\left(\dfrac{-1}{2}\right)$

b) $-\left(-\dfrac{4}{9}\right)+\dfrac{-1}{18}\times 9$

c) $\left(-\dfrac{3}{5}+\dfrac{-4}{5}+\dfrac{7}{5}\right)\div\dfrac{12}{5}$

d) $\dfrac{-\dfrac{3}{4}\div\dfrac{1}{4}}{-\dfrac{3}{7}}$

e) $-\left(-\dfrac{3}{2}\right)^{3}\div\left(-\dfrac{3}{4}\right)$

f) $\left(\dfrac{-3}{5}\right)\times\dfrac{4}{3}+\dfrac{3}{8}\times(-2)$

1. Name the operation that has to be performed first according to the order of operations. Then evaluate the expressions performing *one operation at a time*. Please, make sure that you display your answer in a correct way, using the '=' sign.

a) $-\dfrac{3}{4}+\dfrac{2}{3}\div\left(-\dfrac{2}{5}+\dfrac{2}{5}\right)$

b) $\left(\dfrac{-3}{7}\right)^2+\left(\dfrac{2}{3}-\dfrac{4}{3}\right)^2$

c) $-\dfrac{3}{40}\times\left(4\div\dfrac{1}{5}\right)-\left(-\dfrac{1}{2}\right)$

d) $\dfrac{-\dfrac{1}{5}}{-\dfrac{7}{20}-\left(-\dfrac{7}{20}\right)}$

e) $\left(-\dfrac{1}{2}-\dfrac{1}{2}\right)^{17}\times\dfrac{41}{25}$

f) $-\left(-\dfrac{7}{8}+\dfrac{1}{5}\right)\div\left(-\dfrac{20}{3}\right)$

1. Write each of the following as a numerical statement, and then evaluate it.

a) The product of $-\dfrac{2}{7}$, $-\dfrac{1}{8}$, and 4.

b) Subtract $\dfrac{2}{5}$ from $\dfrac{1}{6}$ and then add $\dfrac{1}{15}$.

c) Divide -4 by $\dfrac{8}{9}$ and then subtract $\dfrac{3}{4}$ from the result.

d) The sum of $-\dfrac{4}{9}$ and the product of $\dfrac{-2}{12}$ and $-\dfrac{15}{2}$.

e) Subtract $\dfrac{3}{2}$ from $\dfrac{1}{4}$ and then raise the result to the third power.

1. Write each of the following as a numerical statement, and then evaluate it.

a) Add $\dfrac{2}{3}$ to $\dfrac{1}{6}$ and divide the result by -3.

b) Multiply $\dfrac{3}{7}$ by $-\dfrac{14}{9}$ and then raise the result to the second power.

c) Raise $\dfrac{-2}{3}$ to the third power and then subtract it from $\dfrac{5}{27}$.

d) Add $\dfrac{5}{12}$ and $\dfrac{1}{24}$, then subtract the result from $\dfrac{5}{6}$.

e) Raise -1 to the twenty second power and subtract the result from 1.

1. Compare the following fractions.

a) $\dfrac{3}{4}$ and $\dfrac{5}{4}$

b) $\dfrac{12}{11}$ and $\dfrac{14}{11}$

c) $\dfrac{4}{9}$ and $\dfrac{6}{5}$

d) $\dfrac{7}{15}$ and $\dfrac{6}{15}$

e) $\dfrac{3}{4}$ and $\dfrac{3}{5}$

f) $\dfrac{5}{3}$ and $\dfrac{7}{3}$

1. Compare the following fractions.

a) $\dfrac{3}{7}$ and $\dfrac{21}{35}$

b) $\dfrac{3}{8}$ and $\dfrac{1}{6}$

c) $\dfrac{4}{7}$ and $\dfrac{5}{8}$

d) $\dfrac{2}{15}$ and $\dfrac{3}{10}$

e) $\dfrac{2}{5}$ and $\dfrac{3}{8}$

f) $\dfrac{5}{6}$ and $\dfrac{8}{9}$

1. Compare the following fractions.

a) $-\dfrac{5}{8}$ and $-\dfrac{3}{4}$

b) $-\dfrac{8}{4}$ and $-\dfrac{6}{5}$

c) $\dfrac{3}{-8}$ and $\dfrac{-2}{7}$

d) $-\dfrac{6}{7}$ and $-\dfrac{8}{9}$

e) $\dfrac{5}{-4}$ and $-\dfrac{9}{7}$

f) $-\dfrac{2}{11}$ and $-\dfrac{3}{22}$

1. Compare the following fractions.

a) $-\dfrac{5}{8}$ and $-\dfrac{5}{9}$

b) $-\dfrac{5}{7}$ and $\dfrac{-2}{3}$

c) $\dfrac{-2}{11}$ and $-\dfrac{3}{11}$

d) $\dfrac{1}{4}$ and $\dfrac{2}{15}$

e) $-\dfrac{32}{12}$ and $-\dfrac{1}{15}$

f) $\dfrac{6}{5}$ and $\dfrac{4}{3}$

2. Replace each x with a digit such that the inequality is true (more than one answer is possible).

a) $\dfrac{x}{7} < \dfrac{5}{7}$

b) $-\dfrac{2}{5} < -\dfrac{2}{x}$

1. Compare the following fractions.

a) $\dfrac{1}{6}$ and $\dfrac{5}{18}$

b) $-\dfrac{1}{2}$ and $-\dfrac{11}{24}$

c) $-\dfrac{7}{8}$ and $\dfrac{-7}{5}$

d) $\dfrac{3}{17}$ and $-\dfrac{2}{5}$

e) $\dfrac{1}{5}$ and $\dfrac{7}{4}$

f) $-\dfrac{4}{15}$ and $-\dfrac{9}{20}$

2. Write the following rational numbers in order from lowest to greatest.

$$-\dfrac{5}{9} \qquad \dfrac{1}{5} \qquad \dfrac{5}{5} \qquad \dfrac{11}{7} \qquad -\dfrac{9}{4} \qquad -\dfrac{4}{7} \qquad \dfrac{2}{5}$$

1. Who ate more than $\dfrac{2}{3}$ of a pizza?

a) Rose ate 3 pieces of pizza cut into 8 parts.

b) Sean ate 5 pieces of pizza cut into 6 parts.

c) Christopher ate 4 pieces of pizza cut into 10 parts.

d) Jessica ate 2 pieces of pizza cut into 4 parts.

e) Sophie ate 1 piece of pizza cut into 3 parts.
.

1. Compare the following fractions.

a) $\dfrac{6}{5}$ and $\dfrac{7}{6}$

b) $-\dfrac{8}{3}$ and $-\dfrac{8}{51}$

2. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-\dfrac{2}{3} \times \left(-\dfrac{5}{12}\right) - \dfrac{1}{6}$

b) $-\left(-\dfrac{4}{5}\right) + \left(-\dfrac{1}{2}\right)(-2)$

c) $\dfrac{-3}{49} - \left(\dfrac{4}{7}\right)^2$

3. Write the following as a numerical statement, and then evaluate it.
First subtract $\dfrac{5}{3}$ from $\dfrac{1}{2}$, and then add $\dfrac{7}{9}$ to the result.

1. Compare the following fractions.

a) $-\dfrac{3}{7}$ and $-\dfrac{4}{7}$

b) $-\dfrac{1}{4}$ and $-\dfrac{2}{7}$

2. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-4 \div \dfrac{6}{7} \div \left(-\dfrac{9}{8}\right)$

b) $\left(-\dfrac{2}{7} - \dfrac{4}{5}\right) \times \dfrac{7}{2}$

c) $-\dfrac{1}{2}\left(-\dfrac{1}{2}\right)^{2}\left(-\dfrac{8}{5}\right)$

d) $-\dfrac{2}{9} + \left(-\dfrac{1}{4}\right) - \left(-\dfrac{5}{2}\right)$

1. Find all rational numbers that are less than $\dfrac{3}{7}$?

a) $\dfrac{-2}{5}$

b) 0

c) $\dfrac{7}{3}$

d) $\dfrac{3}{5}$

e) $\dfrac{3}{8}$

2. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\left(-\dfrac{5}{4}+\dfrac{3}{2}\right)\times\left(-\dfrac{2}{3}-\dfrac{3}{4}\right)$

b) $\left(-\dfrac{2}{7}-\dfrac{1}{3}\right)(-21)$

c) $\left(\dfrac{-5}{2}\right)^{2}+\dfrac{-7}{12}$

1. Replace each x with a digit such that the inequality is true (more than one answer is possible).

a) $\dfrac{5}{8} > \dfrac{x}{8}$

b) $\dfrac{8}{7} > \dfrac{x}{3}$

2. Write the following as a numerical statement, and then evaluate it.

Add $\dfrac{2}{3}$ and $\dfrac{1}{2}$, and then raise the result to the second power.

3. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $\left(\dfrac{-9}{4} + \dfrac{3}{4} - \dfrac{-5}{4} \right)^{3}$

b) $-\dfrac{5}{6} - \left(-\dfrac{1}{4} \right) \times \dfrac{8}{3}$

c) $\left(\dfrac{-3}{2} + \dfrac{3}{4} \right) \div \left(-\dfrac{3}{7} - \dfrac{1}{2} \right)$

1. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-\dfrac{5}{8}-\dfrac{7}{3}\div\dfrac{28}{9}$

b) $\left(\dfrac{2}{3}\right)\left(\dfrac{9}{5}\right)-\dfrac{1}{3}\left(-\dfrac{5}{4}\right)$

c) $\left(-\dfrac{2}{3}-\dfrac{1}{6}\right)\left(-\dfrac{5}{2}+\dfrac{1}{5}\right)$

d) $-\dfrac{7}{12}\div\left(-\dfrac{3}{4}\right)-\dfrac{3}{10}$

a) $\left(-\dfrac{3}{7}-\dfrac{1}{8}\right)\div(-1)$

2. Write the following as a numerical statement, and then evaluate it.
Multiply $\dfrac{4}{3}$ and $-\dfrac{3}{8}$, and then raise the result to the third power.

1. Write the following rational numbers in order from lowest to greatest.

$$-\frac{2}{19} \qquad 0 \qquad \frac{3}{4} \qquad \frac{3}{10} \qquad 1 \qquad \frac{-8}{19} \qquad \frac{18}{7}$$

2. Perform the following operations. Show all your steps and use "=" correctly. Always reduce if possible.

a) $-4 \div \left(\dfrac{-8}{7}\right) + \dfrac{3}{5}$

b) $\dfrac{18}{5} \times \dfrac{7}{12} - \left(-\dfrac{3}{8}\right)$

c) $-\left(-\dfrac{1}{3}\right)^3 + \left(-\dfrac{2}{9}\right)^2$

d) $-\dfrac{3}{5} - \left(-\dfrac{4}{5}\right) + \left(-\dfrac{7}{25}\right)$

1. This is one unit.
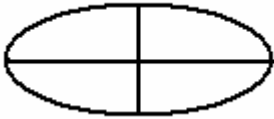
Which mixed number shows how much is shaded?

2. This is one unit.
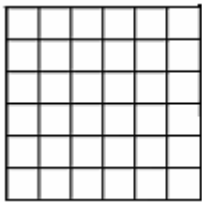
Which mixed number represents the area below?

a)

b)
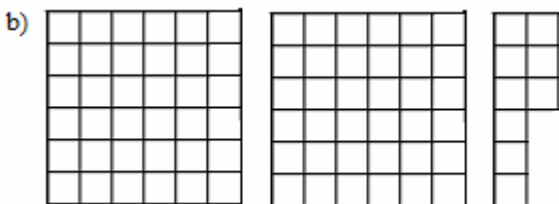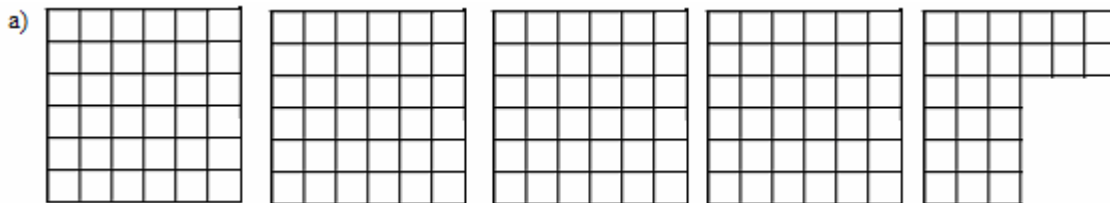
1. All marks are equally spaced. Assume that the length of the segment AD represents one unit.

A   B   C   D   E   F   G   H   I   J   K   L

Which mixed number represents the length of the segment AL?

1. Convert the following mixed numbers to fractions.

a) $20\dfrac{1}{30}$

b) $-10\dfrac{1}{37}$

c) $8\dfrac{4}{5}$

d) $-21\dfrac{1}{2}$

e) $9\dfrac{2}{7}$

2. Find the missing numerator.

a) $3\dfrac{1}{4} = \dfrac{?}{4}$

b) $-2\dfrac{5}{9} = -\dfrac{?}{9}$

c) $-8\dfrac{3}{1000} = -\dfrac{?}{1000}$

1. Convert the following improper fractions to a mixed number.

a) $\dfrac{56}{5}$

b) $-\dfrac{17}{3}$

c) $-\dfrac{65}{7}$

d) $\dfrac{134}{130}$

e) $\dfrac{39}{4}$

2. For a party, all the oranges were cut into fourths. After the party, 17 pieces were left. Which mixed number represents the total number of oranges left?

1. For each of the following fractions determine between which two integers on the number line the fraction is located.

a) $-\dfrac{19}{4}$

b) $-\dfrac{46}{5}$

c) $\dfrac{83}{9}$

d) $-\dfrac{56}{8}$

e) $\dfrac{5}{145}$

f) $-\dfrac{2}{105}$

1. Plot (as precisely as you can) the following numbers. Describe the procedure you used plotting.

a) $-2\dfrac{3}{4}$

b) $\dfrac{13}{3}$
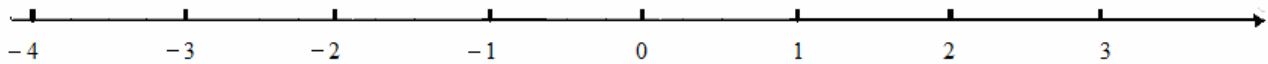
c) $-\dfrac{17}{9}$
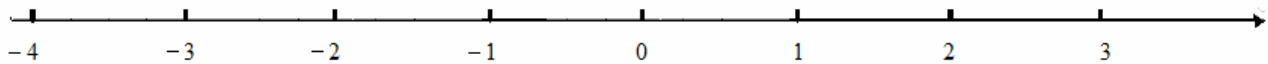
2. Assume that all lines below are lines with equally spaced marks on them. Choose the point corresponding to 0 and 1 in such way that it is convenient for you to plot the following fraction.

a) $\dfrac{9}{11}$

b) $-\dfrac{3}{5}$

c) $-\dfrac{7}{4}$

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1. What fraction corresponds to point A, B, C, D, E and F on the following number lines. Assume that all marks on the line are equally spaced. If a fraction is an improper fraction, write it also as a mixed number.

a)

b)

c)

d)

e)

f)
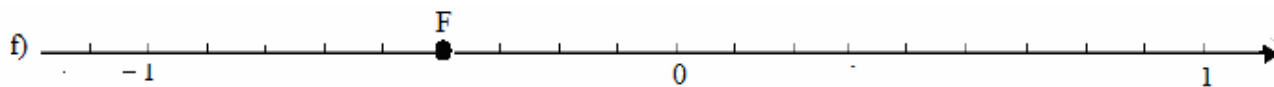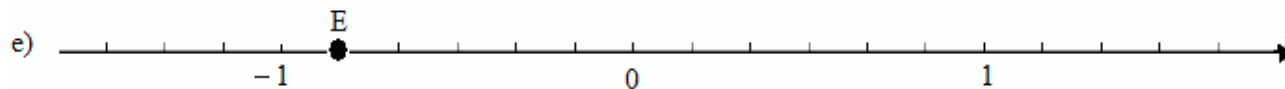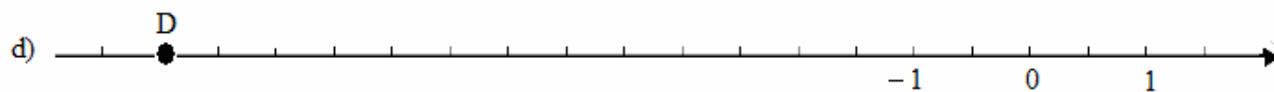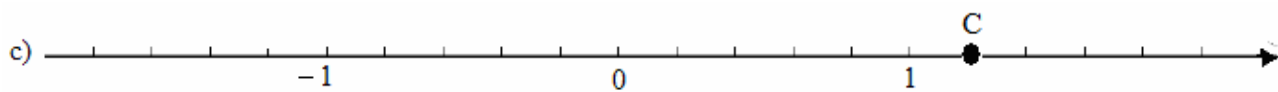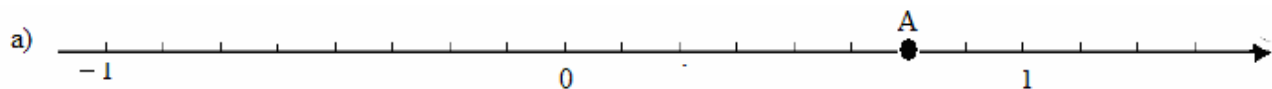
1. Perform the indicated operations.

a) $1 - \dfrac{11}{72}$

b) $1 + \dfrac{8}{19}$

c) $1 - \dfrac{46}{51}$

d) $-1 - \dfrac{24}{26}$

e) $\dfrac{32}{77} + 1234$

f) $101 - \dfrac{22}{23}$

g) $-14 + \dfrac{8}{11}$

h) $-\dfrac{3}{18} + 24$

i) $-26 - \dfrac{9}{50}$

j) $-\dfrac{9}{29} + 225$

1. Perform the indicated operations.

a) $123\dfrac{4}{55} - 23\dfrac{3}{55}$

b) $-2\dfrac{4}{5} + 3\dfrac{1}{2}$

c) $-1\dfrac{3}{4} - 4\dfrac{2}{3}$

d) $4\dfrac{3}{5} - 2\dfrac{1}{10}$

e) $-5\dfrac{2}{3} - \left(-2\dfrac{1}{6}\right)$

f) $-\left(-2\dfrac{1}{10}\right) - 1\dfrac{7}{5}$

g) $2\dfrac{1}{3} - 1\dfrac{1}{2} - 3\dfrac{5}{6}$

h) $100\dfrac{2}{3} - 50\dfrac{1}{6}$

1. Perform the indicated operations.

a) $1\dfrac{2}{5} \times 2\dfrac{6}{7}$

b) $-2\dfrac{1}{5} \div 4\dfrac{7}{8}$

c) $\left(-2\dfrac{1}{4}\right)\left(-1\dfrac{2}{9}\right)$

d) $\dfrac{2\dfrac{3}{7}}{-4\dfrac{1}{2}}$

e) $-2\dfrac{1}{5} \times 2\dfrac{2}{9}$

f) $1\dfrac{1}{21} \div \left(-3\dfrac{5}{7}\right)$

g) $-4\dfrac{1}{3}\left(-1\dfrac{7}{13}\right)\left(-2\dfrac{3}{4}\right)$

1. Perform the indicated operations.

a) $\left(-1\dfrac{1}{4}\right)^3$

b) $\left(-1\dfrac{1}{9}\right)^2$

c) $-\left(1\dfrac{1}{9}\right)^2$

d) $-\left(-2\dfrac{1}{5}\right)^2$

e) $-\left(1\dfrac{1}{2}\right)^4$

1. Perform the indicated operations.

a) $\left(4\dfrac{10}{301} - 2\dfrac{11}{301}\right) \times 3\dfrac{1}{100}$

b) $-2\dfrac{3}{22} - \left(-3\dfrac{7}{11}\right) - 1\dfrac{1}{22}$

c) $1\dfrac{3}{8} \times \left(-2\dfrac{1}{11}\right) - 3\dfrac{1}{2}$

d) $\left(-2\dfrac{2}{3} + 2\dfrac{1}{2}\right) \times 1\dfrac{4}{9}$

e) $\dfrac{-2\dfrac{1}{2} - 1\dfrac{5}{8}}{2\dfrac{1}{6}}$

f) $4\dfrac{2}{7} \div 2\dfrac{8}{11} - \left(1\dfrac{3}{4}\right)^2$

1. Perform the indicated operations.

a) $-3\dfrac{4}{5} \times \left(-1\dfrac{1}{38}\right) + 1$

b) $-2\dfrac{3}{100} - \left(-1\dfrac{1}{10}\right)^2 - 5$

c) $\left(4\dfrac{1}{12} - 5\dfrac{5}{6}\right) \div \left(-2\dfrac{2}{5}\right)$

d) $\dfrac{-4\dfrac{1}{2} + 3\dfrac{1}{2}}{7\dfrac{8}{9} - 8}$

e) $\left(-2\dfrac{1}{3} + 1\dfrac{5}{9}\right) \times \left(2\dfrac{5}{6} - 1\dfrac{7}{12}\right)$

f) $-\left(-2001\dfrac{2}{7} + 2002\dfrac{11}{14}\right)^4$

1. This is one unit.

Which mixed number shows how much is shaded?

2. Convert the following mixed number to a fraction.

$$-100\frac{1}{77}$$

3. Convert the following improper fraction to a mixed number.

$$\frac{56}{8}$$

4. Below is the line with equally spaced marks on it.

Choose the point corresponding to 0 and 1 in such way that it is convenient for you to plot $\dfrac{7}{9}$

5. Perform the indicated operation.

a) $-4\dfrac{2}{5}+3\dfrac{1}{2}$

b) $\dfrac{-4\dfrac{2}{3}}{1\dfrac{1}{6}}$

c) $\left(-2\dfrac{3}{5}+1\dfrac{1}{2}\right)-\dfrac{3}{7}\times\left(-2\dfrac{1}{3}\right)$

1. Convert the following improper fractions to a mixed number.

$$\frac{29}{4}$$

2. Find the missing numerator.

$$4\frac{3}{15} = \frac{?}{15}$$

3. Below is the line with equally spaced marks on it.

Choose the point corresponding to 0 and 1 in such way that it is convenient for you to plot $-2\frac{3}{5}$

4. Perform the indicated operation.

a) $-3\frac{2}{13} \div 4\frac{1}{3}$

b) $-1\frac{3}{7} - \left(-2\frac{2}{5}\right) + \left(-3\frac{3}{5}\right)$

c) $\left(-4\frac{1}{5} \div 2\frac{1}{10}\right) - 4\frac{7}{18}$

1. Convert the following mixed numbers to fractions.

$7\dfrac{2}{9}$

2. Determine between which two integers on the number line the fraction $-\dfrac{16}{5}$ is located.

3. What fraction corresponds to point A on the following number line? Assume that all mark on the line are equally spaced. If a fraction is an improper fraction, write it also as a mixed number.
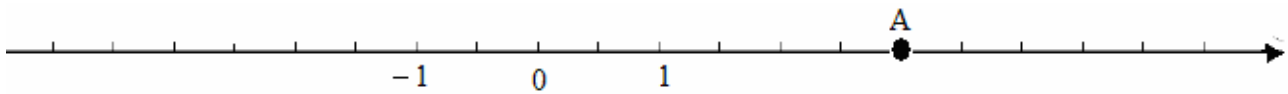
3. Perform the indicated operation.

a) $2\dfrac{1}{9} - 1\dfrac{5}{6}$

b) $-\left(-2\dfrac{2}{5}\right) + \left(-4\dfrac{2}{3}\right)$ c) $9\dfrac{2}{7} \times \left(-1\dfrac{12}{65}\right)$

d) $-5\dfrac{3}{5} \div 6\dfrac{2}{3} - 4\dfrac{1}{10}$

1. Below is the line with equally spaced marks on it.

Choose the point corresponding to 0 and 1 in such way that it is convenient for you to plot $-1\dfrac{5}{6}$.

2. All marks are equally spaced. Assume that the length of the segment AF represents one unit.

A   B   C   D   E   F   G   H
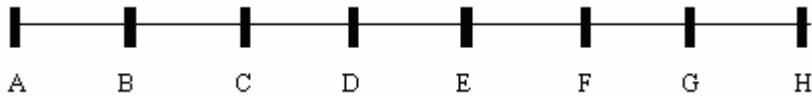
Which mixed number represents the length of the segment AH?

3. Convert the following mixed number to fraction.

$-12\dfrac{4}{5}$

4. For the fraction $-\dfrac{65}{4}$ determine between which two integers on the number line the fraction is located.

5. Perform the indicated operation.

a) $-1\dfrac{3}{8} \div 2\dfrac{1}{4} \times \left(-1\dfrac{7}{11}\right)$

b) $-234\dfrac{2}{15} - 21\dfrac{7}{45}$

c) $-2\dfrac{4}{9} - 1\dfrac{3}{7} \times \left(-2\dfrac{1}{3}\right)$

1. For the fraction $-\dfrac{7}{6}$ determine between which two integers on the number line the fraction is located.

2. Convert the following mixed number to a fraction.

$12\dfrac{1}{5}$

3. What fraction corresponds to point A on the following number line. Assume that all mark on the line are equally spaced. If a fraction is an improper fraction, write it also as a mixed number.
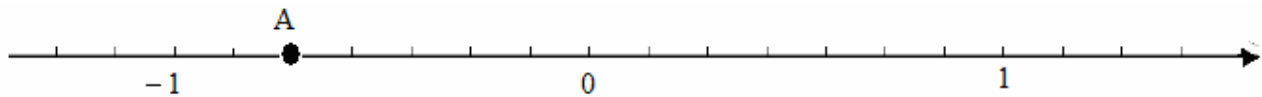
3. Perform the indicated operation.

a) $88\dfrac{1}{20} - \left(-2\dfrac{3}{5}\right) \div (-26)$

b) $-1\dfrac{3}{7} - \left(-2\dfrac{2}{5}\right) + \left(-3\dfrac{3}{5}\right)$

c) $\dfrac{3\dfrac{2}{3}}{-4\dfrac{1}{2}}$

d) $-\left(-8\dfrac{1}{2}\right)\left(1\dfrac{3}{17}\right)\left(-2\dfrac{1}{4}\right)^{2}$

1. Convert the following improper fraction to a mixed number.

$$\frac{25}{3}$$

2. Find the missing numerator.

$$-7\frac{4}{5} = \frac{?}{5}$$

3. Below is the line with equally spaced marks on it.

Choose the point corresponding to 0 and 1 in such way that it is convenient for you to plot $-1\frac{1}{3}$.

4. Perform the indicated operation.

a) $-4\frac{5}{8} \div 2\frac{1}{12}$

b) $1248 - \frac{23}{25}$

c) $-\left(-2\frac{3}{50}\right) - \left(-1\frac{1}{25}\right) + 3\frac{7}{10}$

d) $-2\frac{3}{4} + 1\frac{2}{3} \times 2\frac{4}{5}$

1. Write a decimal that represents the shaded area.
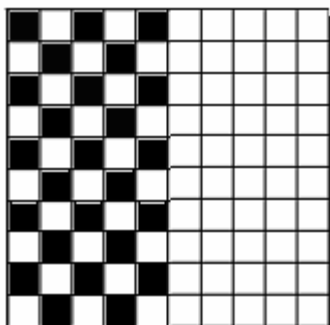
2. This is a unit.

Write a decimal that represents the shaded area.
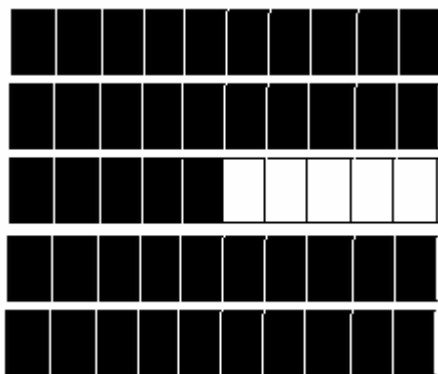
3. Identify the integer part and the fractional part of each of the following decimals.

a) 89.6

b) − 405.12

1. In the number 391. 702 find the following place values.

a) ones

b) tenths

c) thousandths

2. In the number -25.9631 find the following place values.

a) hundredths

b) ten thousandths

c) tens

3. Construct a decimal with the following place values: 9 in the tenths column, 4 in the ones column, 7 in the tens column, 2 in the hundreds columns, 8 in the thousandths column, and 1 in the hundredths column.

4. Construct a *negative* decimal with the following place values: 3 in the hundredths column, 5 in the hundreds column, 0 in the tenths column, 9 in the tens column, and 7 in the ones column.

5. For each of the following decimals count the number of decimal places to the right of the decimal point. Also, name the last digit (most to the right)   and name its place value.

a) 4.02027

b) -0.4

6. In which place is the digit 2 in the number.

a) -24.39

b) 1.209

c) 0.4532

1. Write each decimal in words.

a) − 23.0034

b) 12.7

c) 0.203

d) − 0.023

e) 0.29

2. Write the following fraction in a decimal notation.

a) one hundred and three tenths.

b) minus four and twenty five ten thousandths

c) thirty seven point twenty six

d) minus one thousand two hundred and six thousandths .

e) minus zero and one hundredth.

1. Fill in the blanks with the proper symbol $\neq$ or $=$.

a) 0.5 _____ 0.05

b) -0.6 _____ $-.60$

c) -4.020 _____ -4.0020

d) 60 _____ 6.0

e) 000.798 _____ 0.7980

f) -0.2890 _____ $-.289$

g) 00012 _____ 12

h) -5.0 _____ -5.00

i) 102.0 _____ 102

j) -2.1000 _____ $-.21000$

2. Circle all decimals that are equal to 671.24

0671.24   6712.4   671.2400   0671.240   607.124   671.2400000

3. Write the decimal 2.35 in its equivalent way such that there are

a) 4 digits after the decimal point.

b) the last place value that is displayed is ten thousandths.

4. Write 46 as a decimal.

.

1. Write each decimal as a fraction.

a) 9.2345

b) -0.25

c) 0.09

d) 2.010

e) -1.0203

f) 0.0123

g) 6.0

1. Perform the following multiplications.

a) 1000×2.34

b) 10×0.89145

c) 100×2.7

d) 89×100

e) 10×23.45

f) 0.3×10000

2. What is the smallest power of 10 we can use to multiply each of the following decimals in order to get an integer?

a) -2.136

b) -0.003

c) 0.7

d) 11.64

1 Perform the following divisions.

a) $0.56 \div 10$

b) $2.6 \div 100$

c) $456.20 \div 1000$

d) $782.34 \div 100$

e) $9 \div 10000$

f) $2.3 \div 1000$

g) $7652 \div 100$

h) $24500 \div 100$

1. The decimal point of a given number was

a) moved 1 place to the left

b) moved 42 places to the right

Determine what kind of operation was performed on the number i.e. was the number multiplied or divided and by what power of 10.

2. Perform the following operations.

a) 3.491×100

b) $2.78 \div 100$

c) $896 \div 10$

d) 0.7×100

e) 3.56×10

f) $3.5 \div 1000$

g) $9 \div 1000$

h) 2030×1000

1. Change the following fraction (or mixed number) to a decimal.

a) $\dfrac{3}{20}$

b) $\dfrac{111}{40}$

c) $-\dfrac{4572}{10}$

d) $-\dfrac{9}{2}$

e) $-\dfrac{24}{10}$

f) $-25\dfrac{1}{8}$

g) $\dfrac{23}{1000}$

h) $-\dfrac{1}{500}$

i) $-\dfrac{21}{40}$

1. Fill in the blank with one of the symbols $<$, $=$, or $>$.

a) 0.5 _____ 0.05

b) -0.1 _____ -0.11

c) -4.2 _____ -4.200

d) 7.4781 _____ 7.4871

e) 0.0001 _____ -99.9

f) -3.21 _____ $-3,219$

g) 04 _____ 04.00

h) 3.237 _____ 3.2371

i) -0.56 _____ . -56

1. Between what two consecutive integers would the following decimals be located on a number line?

a) 7.999

b) − 31.01

c) 4.040

d) − 0.982

2. Circle all decimals that are less than 1.78

$\quad$ − 1.78 $\quad$ 1.7 $\quad$ 1.789 $\quad$ 1.68 $\quad$ 1.97 $\quad$ 2.78 $\quad$ 1.8

3. Write the following numbers in order from the smallest to the largest.

$\quad$ − 0.6 $\quad$ − 0.06 $\quad$ − 2.3 $\quad$ − 0.71 $\quad$ 0.234 $\quad$ .23 $\quad$ 0.235 $\quad$ 0.3

4. Replace X with any digit to make the statement true

a) 0. X > 0.4

b) 1. X2 < 1. 32

c) − 0.34 < −0.3X

d) 2 = 2.X

1. In the number 245.371 find the following place values.

a) hundreds

b) tenths

2. Fill in the blanks with the proper symbol $\neq$ or $=$.

a) 00.75 _____ .75   b) 0.2 _____ 0.02

3. Write 263 as a decimal.

4. Write the following decimal as a fraction.
          -0.017

5. Perform the following operations.

a) 4.8×100

b) $235 \div 100$

c) $4.3 \div 1000$

6. Circle all decimals that are less than 0.23.

        0.2   0.3 -0.1 0.234   0.91   0.21   0.2178

7. Between what two consecutive integers would the following decimals be located on a number line?

-2.9912

8. Change the following fraction to a decimal. $\dfrac{71}{1000}$

1. Write the following fraction in a decimal notation.
   three hundred and two hundredths.

2. Find all decimals that are greater than 8.672

   8.673　　8.　　-8.672　　8.679　　8.6　　8.67　　9.1

3. Fill in the blank with the proper symbol $\neq$ or $=$.

   2.3000 _____ 2.30

4. Write the decimal as a fraction.
   -2.017

5. Perform the following operations.

a) 1.2×10

b) $0.6 \div 1000$

c) 0.000001×1000

6. Change the following fraction to a decimal.

$\dfrac{3}{8}$

7. Replace X with any digit to make the statement true

X.99 > 8.999

1. In the number 46.7891 find the following place values.

a) thousandths

b) tens

2. Fill in the blanks with the proper symbol $\neq$ or $=$.

a) 77.0 _____ 00077

b) 0.31 _____ 0.301

2. Write the decimal as a fraction.

25.4578

3. Perform the following operations.

a) 10×1000.2

b) $5 \div 1000$

c) $0.0207 \div 10$

4. Change each of the following fractions (or mixed numbers) to a decimal.

a) $-\dfrac{1}{5}$

b) $\dfrac{167}{10}$

5. Fill in the blank with one of the symbols $<$, $=$, or $>$.

a) -0.78 _____ -0.78123

b) 2.3589 _____ 2.3859

1. In which place is the digit 7 in the number.

   $- 0.5827$

2. Fill in the blank with the proper symbol $\neq$ or $=$.

   0.45 _____ $.45$

3. Write each decimal as a fraction.

a)   0.004

b) -10.19

4. Perform the following operations.

a) $3.5 \div 1000$

b) $0.007 \div 10$

c) 7.1×1000

5. Change the following mixed number to a decimal.

   $123\dfrac{9}{20}$

6.   Circle all decimals that are greater than 0.007

   | 0.0007 | 0.7 | 0.78 | 0..07 | 0.0071 | 0.102 | -0.8 |

7. Replace X with any digit to make the statement true

   $0.89X = 0.897$

1. Write a decimal that represents the shaded area.
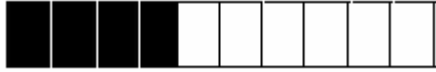
2. In which place is the digit 8 in the number 89.453

3. Write the following fraction in a decimal notation.

a) one and twelve hundredths.

b) thirty two ten thousandths

4. Circle all decimals that are equal to 7.8

     7.800   0.78   007.8   7.80000   78

5. Write the decimal as a fraction.

-2.0107

6. Perform the following operations.

a) 100×5.6

b) $8 \div 1000$

c) 0.12345×1000

7. Change the following fraction to a decimal: $-\dfrac{7}{500}$ *1*

8. Fill in the blank with one of the symbols $<, \ =, \ $ or $ \ >$.

a) 0.345 _____ 0.364
b) -7.1 _____ -7.15

9. Between what two consecutive integers would the following decimal be located on a number line?
-1.001

1. Construct a decimal with the following place values: 4 in the tenths column, 2 in the ones column, 9 in the tens column, 8 in the hundreds columns, 5 in the thousandths column, and 1 in the hundredths column.

2. Fill in the blank with the proper symbol $\neq$ or $=$.

 7 _____ 7.0

3. Write each decimal as a fraction.

a) 0.23

b) $- 4.005$

4. Perform the following operations.

a) 34×100

b) $0.3 \div 100$

c) $237 \div 10$

5. Change the following fraction to a decimal.

a) $\dfrac{7459}{10}$

6. Fill in the blank with one of the symbols $<,\ =,\ \text{or}\ >$.

a) 0.675 _____ 0.678
b) $- 0.7$ _____ $- 3.7$

7. Between what two consecutive integers would the following decimals be located on a number line?
    4.87

1. Perform the indicated operations.

a) $0.2 + 8.99$

b) $2.3 - 0.0.4$

c) $-2.6 + 1.7$

d) $-0.342 - 0.827$

e) $1.23 - 2.4$

f) $-23.1 + 0.09$

g) $-12.4 - 1.9$

h) $-0.3 + 0.02$

1. Perform the indicated operations.

a) $2.3 + (-2.37)$

b) $-2.3 - 1.5 - (-0.02)$

c) $0.4 - (-1.7) - 2.6$

d) $-(-0.9) + (-1.4)$

e) $4.2 - (-1.99)$

f) $-0.02 - (-0.2)$

g) $-2.562 + 8.1 + 2.562 - 0.9$

h) $-3.4 - 3.8 - 0.7$

i) $0.9 - (+0.7) - (-0.3)$

1. Perform the indicated operations.

a) $0.45 \times (-0.2)$

b) $-0.5 \times (-6)$

c) -0.01×7.234

d) -0.02×1.04

e) $-0.1 \times (-234.7)$

f) $0.15 \times (-0.4)$

g) $1.2 \times (-0.02)$

h) -0.09×0.008

1. Perform the indicated operations.

a) $300.1 \times (-0.01) \times 0.02$

b) $-0.04 \times (-0.2) \times (-7)$

c) $(-0.2) \times 2.1 \times 0.02$

d) $-0.3 \times 0.2 \times (-0.1) \times 0.4 \times (-0.2)$

e) $-300 \times (-0.2) \times (-0.1) \times (-0.01)$

f) $0.01 \times (-0.7) \times (-0.7)$

g) $(-0.2) \times (-0.3) \times (-0.4)$

1. Write the following statement using exponential notation and determine the sign of the result. Remember about the proper use of parentheses. Do not evaluate.

a) 0.783 raised to the forty second power.

b) − 0.67 raised to the tenth power.

c) −34.98 raised to the twenty first power.

2. Perform the indicated operations.

a) $(0.8)^2$

b) $(-0.2)^5$

c) $-(-1.2)^2$

d) $-(-0.1)^8$

e) $-(0.05)^2$

1. Perform the indicated operations.

a) $0.32 \div (-0.08)$

b) $10.5 \div 1.5$

c) $\dfrac{0.036}{-0.9}$

d) $-234.678 \div (-0.0001)$

e) $\dfrac{-0.006}{-0.09}$

f) $\dfrac{-1.8}{3}$

g) $0.11 \div (-0.012)$

1. Perform the indicated operations. Give the answer in the form of a decimal or an integer.

a) $-0.3 \div 1.2$

b) $\dfrac{-0.28}{-70}$

c) $\dfrac{0.2}{-0.04}$

d) $0.001 \div (-0.5)$

e) $\dfrac{0.2947}{0.01}$

f) $-0.5 \div (-0.8)$

g) $\dfrac{37.6}{1000}$

1. Perform the indicated operations.

a) $-(-0.006)^2$

b) $-0.08 \div 1000$

c) $\dfrac{-0.02}{8.8}$

d) $-3.45 + 0.8$

e) $-0.04 \times (-0.5)$

f) $21 \div (-0.03)$

g) $34.7 \times (-100)$

h) $-6.8 - (-0.05)$

1. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $(10 \times 0.08)^2$

b) $-4.33 + 33.72 \times 0.1$

c) $\dfrac{-2.34 + 2.34}{0.2 \times (-0.8)}$

d) $(-2.5 + 3.7 - 0.9)(-0.01)$

e) $-3.7 - (2 - 4.3)$

f) $-1.2 \div 0.3 \times (-0.03)$

1. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $-(0.04 \times 0.1)^3$

b) $\dfrac{-0.6 \times 10}{0.1 - 0.02}$

c) $-10 \times (-0.04)^2$

d) $\dfrac{8}{-0.01 - (-0.1 \times 0.1)}$

e) $2.7 \div (-0.9) \times 0.04$

f) $(-0.6)(-3)(-0.2) - 1$

1. Write the following statement using mathematical symbols and then evaluate them.

a) Subtract 4.2 from 3.7 and then multiply the result by 0.2

b) Add 0.5 to 0.08 and then divide the result by -2

c) Multiply -2.2 by 0.3 and then subtract the result from 0.5.

d) Divide -0.18 by -0.009 and then add the result to -0.7.

e) Raise -0.5 to the second power and then multiply the result by -0.004

f) Divide -0.001 by 0.0001 and then multiply the result by 45.67

1. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $0.9 - (-0.03)$

b) $\dfrac{1.4}{-0.14}$

c) $-(0.07)^2$

d) $-0.2 + 0.5 - 0.9$

e) $0.4 \times (-0.05)$

f) $(-0.7 - 0.5) \div 0.08$

2. Write the following statement using mathematical symbols and then evaluate them.
  Multiply -0.5 by 0.08 and subtract the result from 1.2

1. Write the following statement using exponential notation and determine the sign of the result. Do not evaluate.

    The number -32.78 raised to the sixtieth power.

2. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $0.42 - 0.05$

b) $\dfrac{0.4}{-0.002}$

c) $(-0.5)(-0.002)(-438)$

d) $(-0.2)^5$

e) $-0.4 + 0.5 \times (-1.2)$

3. Perform the indicated operation. Give your answer in the form of a decimal.

    $0.3 \div 2$

1. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $(-0.5)(-0.06)$

b) $-(-0.8) + (-0.9)$

c) $\dfrac{-0.18}{2.4}$

d) $-4.5 - 0.6$

e) $\dfrac{1}{(-0.01)^3}$

2. Write the following statement using mathematical symbols and then evaluate them.
      Add 0.7 and 2.3 and then multiply the result by -0.07

1. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $0.5 + (-0.05)$

b) $-2.5 \times (-0.04)$

c) $2 - (0.1 - 0.2)$

d) $0.2 \div (0.2)^2$

2. Write the following statement using mathematical symbols and then evaluate them.
Subtract 0.89 from 1 and then divide the result by 10.

3. Perform the indicated operation. Give your answer in the form of a decimal.

$0.23 \div (-0.5)$

1. Perform the indicated operations, if possible. Otherwise, write "undefined".

a) $-2.4+3.07$

b) $345.7\times(-0.01)$

c) $-0.7-(-0.3+0.8)$

d) $\dfrac{9}{-0.6\times0.6+0.36}$

2. Write the following statement using mathematical symbols and then evaluate them.

Divide -0.67 by 10 and then add the result to -0.261.

3 Write the following statement using exponential notation and determine the sign of the result. Do not evaluate.
Raise the number -4.78 to the one hundredth power.

1. Perform the indicated operations, if possible. Otherwise, write "undefined".
".

a) $0.03 - 0.23 - 0.72$

b) -0.2×250

c) $-(-4) \div (-0..8)$

d) $-(2 \div 0.01)^3$

e) $-0.03 \times (-2.3 + 0.3)$

2. Perform the indicated operation. Give your answer in the form of a decimal.

$0.9 \div (-2.5)$

1. Using percent notation, write the number representing the portion of the area that is shaded.

a)

b)

c)
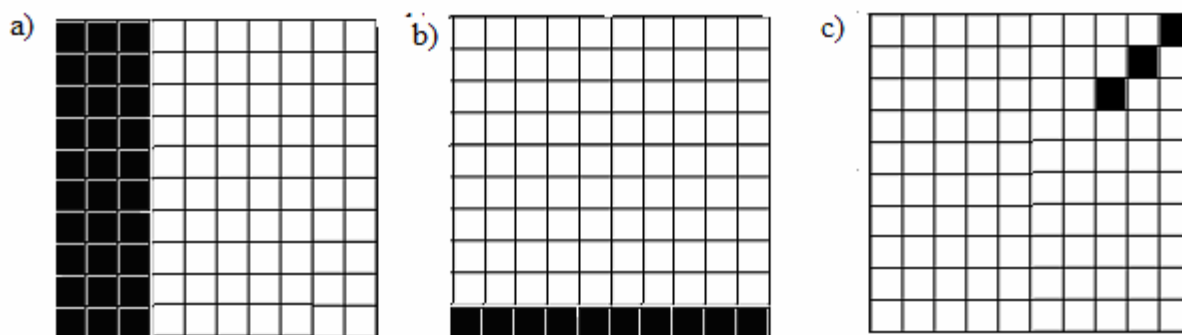
2. This is one unit.

Using percent notation, write the number representing the portion of the area that is shaded.

a)

b)
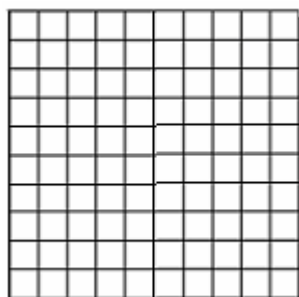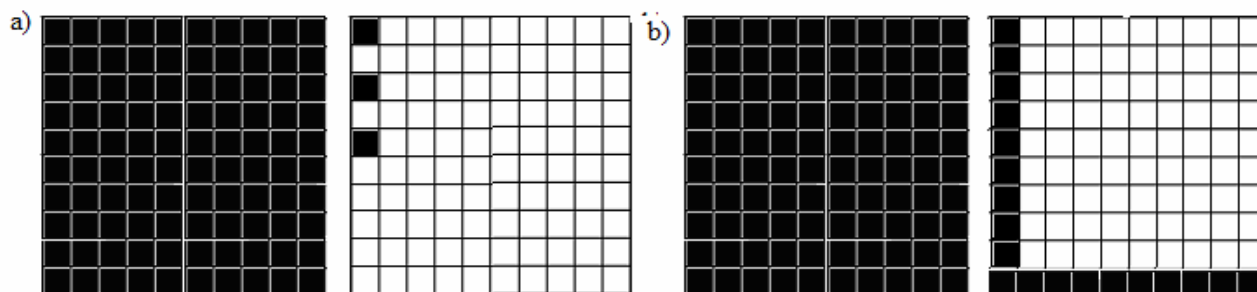
1. Shade the area corresponding to

a) 60%

b) 9%

c) 15%
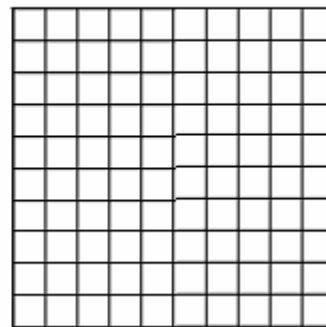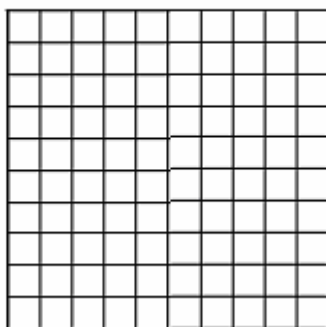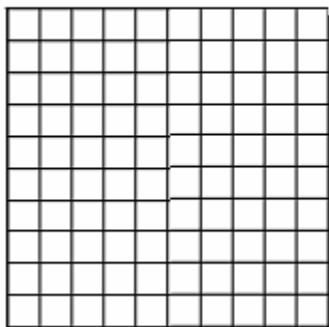
2. This is one unit.
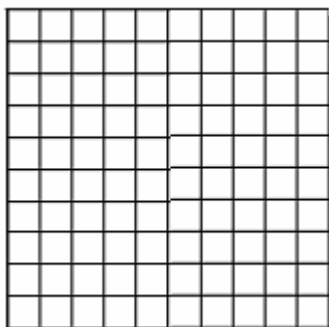
a) Shade the area corresponding to 250%.
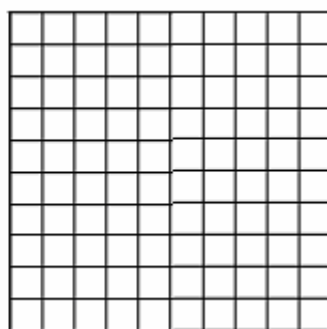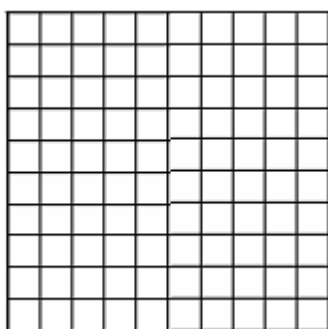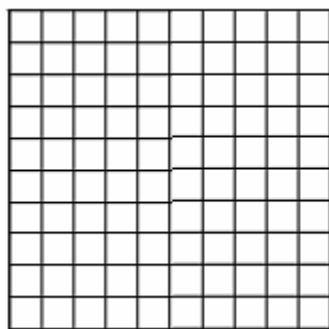
b) Shade the area corresponding to 175%

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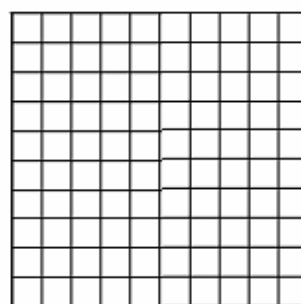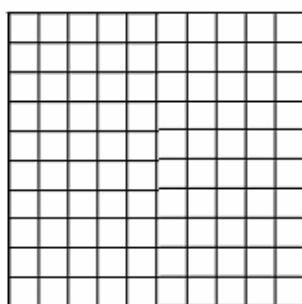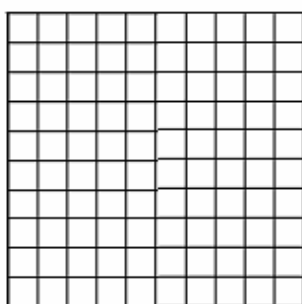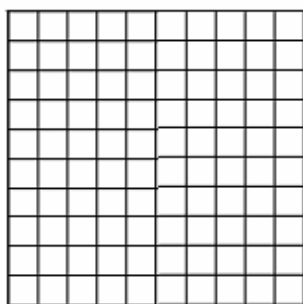
1. Write the following in decimal notation.

a) 0.2%

b) 400%

c) 6.91%

d) 0.34%

e) 0.0002%

f) 17%

g) 3.001%

h) 0.623%

1. Write the following decimals as percents

a) 2.3

b) 560

c) 0.009

d) 0.34

e) 1

f) 0.25

g) 0.1

h) 7.902

1. In an apartment building 7 out of 8 apartments are vacant. What percent of apartments is vacant?

2. The distance between Joanne's workplace and her house is 2 miles. She has completed 0.4 miles of her walk home from work. What percent of the entire walk did she already do?

3. What percent of 51 is 0.051?

4. What percent of 30 is 75?

3. Attendance at the picnic this year is 50 people, while last year it was 40 people. (Hint: Be careful which number goes in the numerator and denominator for parts a and b)
a) What percent of last year's attendance is the attendance this year ?

b) What percent of this year's attendance is last year's attendance?

4. What percent of 1 is 0.45?

5. What percent of 12 is 18?

6. Ronald has 5 pets. He has 3 cats, 2 dogs and 1 rabbit.
a) What percent of his pets are cats?

b) What percent of his pets are dogs?

1. What percent of 0.4 is 0.02?

2. What percent of the area is shaded?
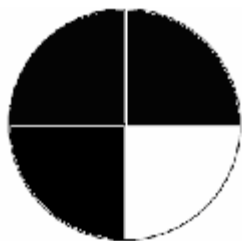
3. What percent of the area is shaded?
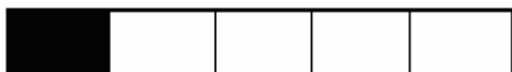
4. What percent of the segment AB is segment AD?
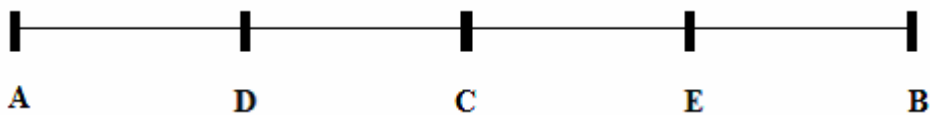
5. What percent of the balls is black?

6. What percent of 7 is 14?

1. The company owns 250 vans. If 8%of the vans are painted red, how many vans are red?

2. The family paid 46 dollars for their meal. They paid 10% tax on it. How much tax did they pay?

3. What is 0.6% of 20?

4. What is 350% of 2?

5. There are 20 children in the preschool. 75% are served pizza for lunch? How many preschoolers are served pizza for lunch?

6. Carol was supposed to attend 40 classes. She missed 5% of her classes. How many classes did she miss?

7. What is 2% of 1.06?

8. What is 6000% of 1.2?

9. Bill has 5 siblings. If 20% of his siblings are sisters, how many sisters does Bill have?

1. Shade the area corresponding to
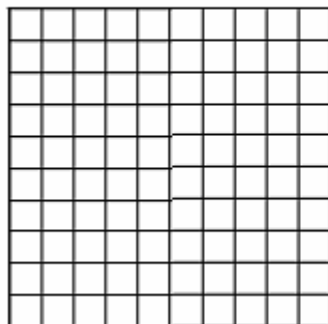
a)   1%   b)   20%
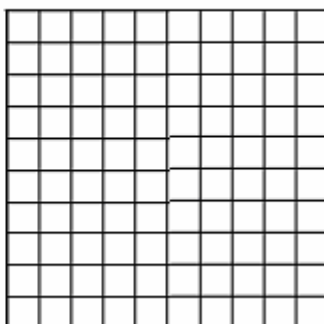
2. Write the following in decimal notation   3.457%

3.   Write the following decimal as percents   0.2.

4.   Seven out of thirty five students were absent today. What percent of the students were absent?

5.   The family paid 50 dollars for their meal. Their tip was 15%? What was the amount of the tip?

6. What is 150% of 4?

7. What percent of 0.5 is 0.01?

1. Peter paid 12 dollars for his lunch. He also paid $1.92 tip. What percent tip did Peter pay?

2. What percent of 120 is 3?

3. Using percent notation, write the number representing the portion of the area that is shaded.

a)

b)
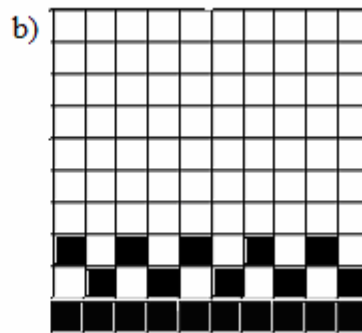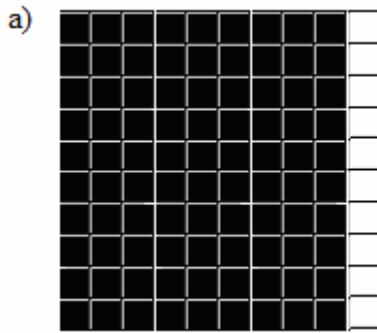
4. Write the following decimal as a percent.
    0.0092

5. Write the following in decimal notation

    52.34%

6. In one company, 60% of the salespeople are women. How many salespeople are women if there are a total of 300 salespeople?

7. What is 120% of 0.7?

1. Alice answered 75% of the questions on her test correctly. If there were a total of 64 questions on the test, how many questions did Alice answer correctly?

2. What is 5.1% of 300?

3. Write the following in decimal notation
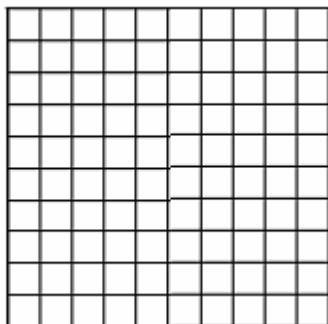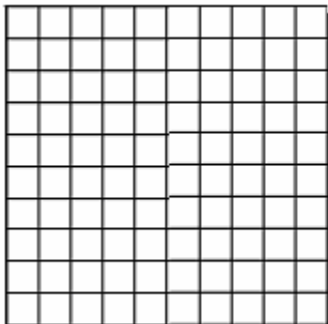   3. 026%

4. This year I went to see 30 different movies. If I liked 27 of the movies I saw, what is the percent of movies I did **NOT** like?

5. What percent of 9 is 0.09?

6. This is one unit.
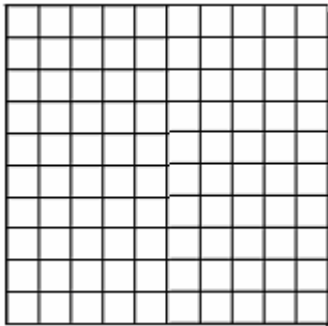
a) Shade the area corresponding to 203%.
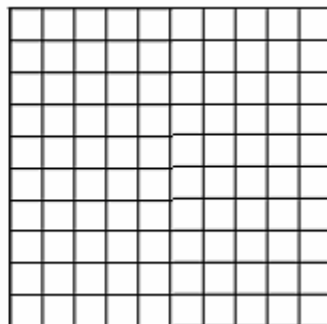
7. Write the following decimal as a percent 124.6

1. Write the following decimal as a percent

0.05

2. What percent of the area is shaded?

3. Natalie lost 3% of her weight. If before she lost the weight she weighed 120 pounds, how many pounds did Natalie loose?

4. What percent of 0.07 is 7?
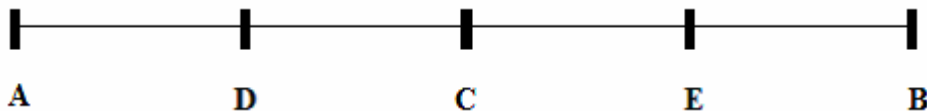
5. Write the following in decimal notation

0.349%

6. The quality inspector found that in a sample of 200 items, there were 14 items of poor quality. What percent of all items in the sample was of poor quality?

7. What is 7% of 9?

1. Write the following in decimal notation

 457%

2. What percent of the segment AB is segment AE?

     A   D   C   E   B

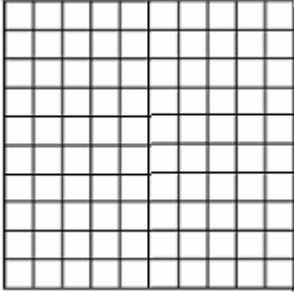3. Write the following number as a percent 4

4. Pacific Coast States are California, Oregon, and Washington. What percent of the 50 states are the Pacific Coast States?

5. Tom invited 70 friends to his birthday party. If only 40% showed up, how many of Tom's friends came to the party?
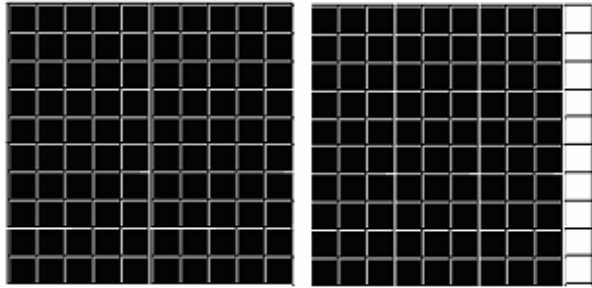
6. What is 0.6% of 20?

7. What percent of 0.15 is 0.003?
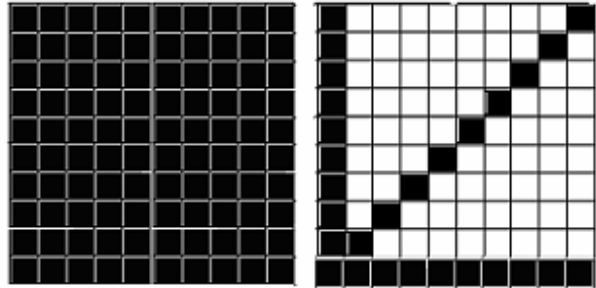
1. This is one unit.

Using the percent notation, write the number representing the portion of the area that is shaded.

a)

b)

2. I read 24 pages out of a 480 page book. What percent of the book have I read?

3. What percent of 36 is 0.2?

4. Write the following decimal as a percent.

0.6

5. Write the following in decimal notation 4.7%

6. If my SAT score is 95% of my brother's SAT score, and my brother got a score of 2000, what is my score on the SAT?

7. What is 0.2% of 15?