

Math 017 Review for Exam 3

1. Solve for  $x$  and check your answer by replacing  $x$  with your answer in the original equation.

(a)  $2x - 6 = 7x + 24$     (b)  $2(x - 4) + 5 = 3x + 7$     (c)  $5x - 4 = 31$

2. Solve for  $x$ .

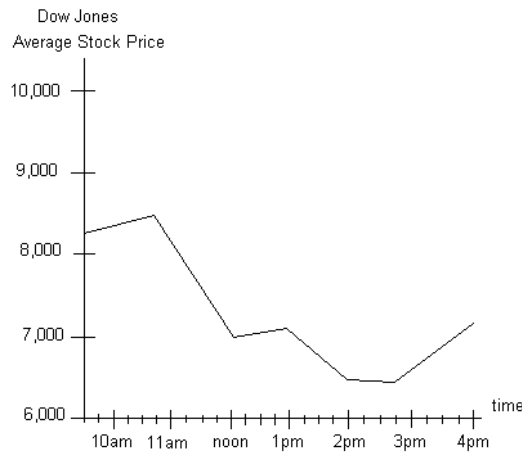
(a)  $x - 6 = 6x + 30$     (b)  $5x - 8 = 2x + 24$     (c)  $4 + 5[3 + 2(4x - 1)] = 6(3x - 1) + 6x$   
(d)  $\frac{3}{4}x - \frac{7}{9} = \frac{5}{8}$     (e)  $0.4x - 0.8 = 0.9x + 0.3$     (f)  $5(2x - 3) + 4(x - 9) = 8x + 5$

3. Solve for  $x$  and sketch the graph on the number line.

(a)  $4x + 3 \leq 6x - 3$     (b)  $-2x < 14$   
(c)  $-8 < 2x - 3 < 15$     (d)  $6x - 1 < 5$     or     $2x + 8 < 3x - 1$

4. Using the graph below:

- (a) estimate the stock price at 1pm.    (b) estimate the time of the highest stock price.



5. Plot and label the points  $A(3, -4)$ ,  $B(4, 1)$ ,  $C(-6, -2)$ ,  $D(0, 2\frac{1}{2})$ ,  $E(5, 0)$ .

6. Plot at least 5 points and sketch the graph.

(a)  $y = x^2 - 5$     (b)  $y = 2x - 4$     (c)  $y = \frac{1}{x - 2}$     (d)  $y = 3$

7. Use algebra to solve the following.

- (a) 52 is 13% of what number?    (b) What is 38% of 65?  
(c) 55 is what percent of 80?    (d) 45 is 12% of what number?

(e) If a restaurant bill including a 15% tip comes to \$34.50 how much was the original bill?

(f) You sell newspapers for 70 cents each at a newsstand. You pay 54 cents for each newspaper sold and you also pay \$200 to rent the newsstand. How many newspapers do you need to sell in order to break even?

(g) If a 51-inch pipe is cut into two pieces such that one piece is twice as long as the other how long is each piece?

(h) Find two consecutive integers such that twice the first integer added to three times the second integer is 88.

Math 017 Answers to Review 3

1.(a) answer:  $x = -6$

check:  $2x - 6 = 7x + 24$   
 $2(-6) - 6 = 7(-6) + 24 ?$   
 $-12 - 6 = -42 + 24 ?$   
 $-18 = -18 ?$   
 yes.

(b) answer:  $x = -10$

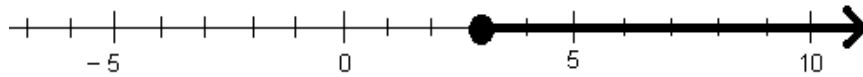
check:  $2(x - 4) + 5 = 3x + 7$   
 $2(-10 - 4) + 5 = 3(-10) + 7 ?$   
 $2(-14) + 5 = 3(-10) + 7 ?$   
 $-28 + 5 = -30 + 7 ?$   
 $-23 = -23 ?$   
 yes.

(c) answer:  $x = 7$

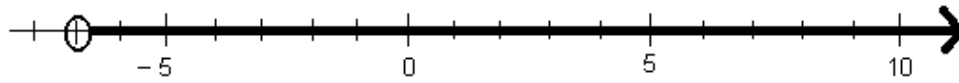
check:  $5x - 4 = 31$   
 $5(7) - 4 = 31 ?$   
 $35 - 4 = 31 ?$   
 $31 = 31 ?$   
 yes.

- 2.(a)  $-36/5$  (b)  $32/3$  (c)  $-15/16$  (d)  $101/54$  (e)  $-11/5$  (f)  $28/3$

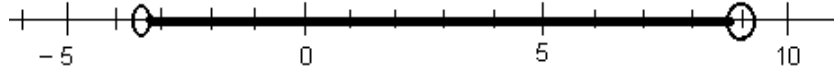
3.(a)  $x \geq 3$



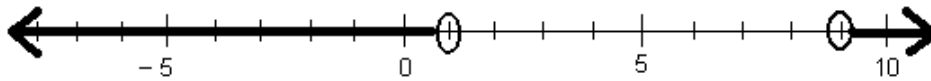
(b)  $x > -7$



(c)  $-2\frac{1}{2} < x < 9$

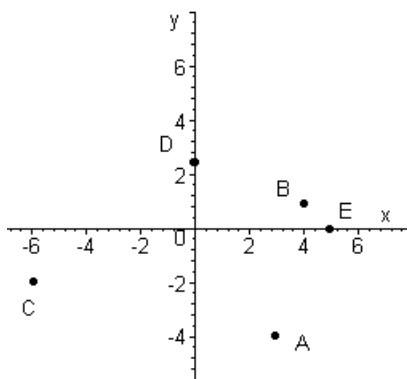


(d)  $x < 1$  or  $x > 9$

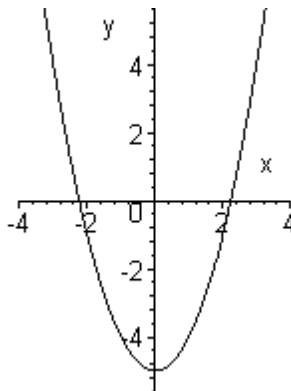


4.(a) 7200 (b) 10:45am

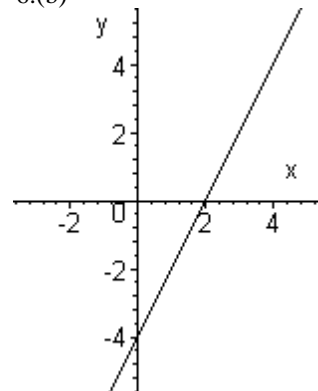
5.



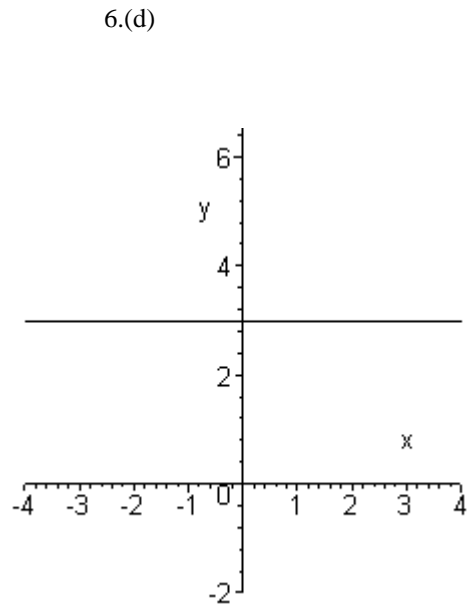
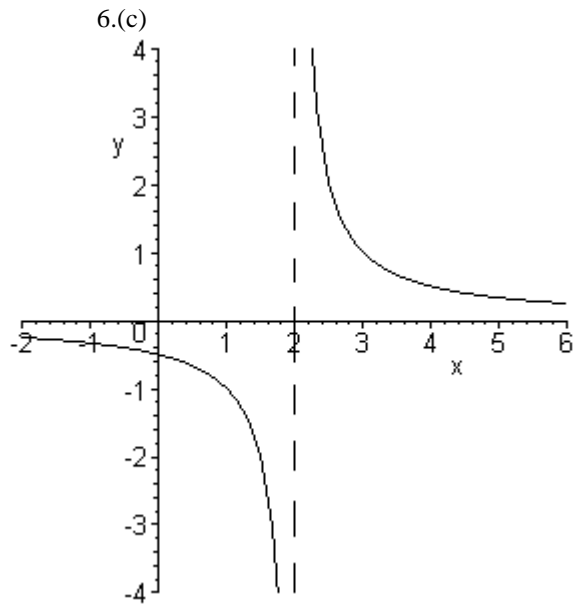
6.(a)



6.(b)



Math 017 Answers to Review 3



7.(a) equation:  $52 = 0.13x$   
answer:  $x = 400$

(b) equation:  $x = 0.38(65)$   
answer:  $x = 24.7$

(c) equation:  $55 = x \cdot 80$   
answer:  $x = 68.75\%$

(d) equation:  $45 = 0.12x$   
answer:  $x = 375$

(e) equation:  $x + 0.15x = 34.5$   
answer:  $x = \$30$

(f) equation:  $0.7x = 200 + 0.54x$   
answer:  $x = 1250$  newspapers

(g) equation:  $x + 2x = 54$   
answer: shorter piece  $x = 18$  inches  
longer piece  $2x = 36$  inches

(h) equation:  $2x + 3(x+1) = 88$   
answer: first integer  $x = 17$   
second integer  $x+1 = 18$