

Math 017 Review for Exam 4

1. Which of the following equations have graphs which are straight lines.

(a) $x = 3y + 9$

(b) $y = 5x - 1$

(c) $y = \frac{1}{x+4}$

(d) $x = -9$

(e) $2x - 6y = 12$

(f) $y = 7$

(g) $y = \sqrt{x}$

(h) $\frac{2}{9}x + \frac{5}{6}y = \frac{1}{2}$

(i) $y = x$

(j) $x^2 + y^2 = 49$

(k) $y = x^2 - 7$

(l) $xy = 6$

2. (a) Is $(3, 5)$ a solution of $\begin{cases} 4x - 2y = 2 \\ -x + 3y = 12 \end{cases}$? (b) Is $(2, -6)$ a solution of $\begin{cases} 5x + 3y = -8 \\ 4x - 2y = -4 \end{cases}$?

3. Plot and label each point and name the quadrant.

$A(3, -4)$

$B(2\frac{1}{2}, 0)$

$C(-2, -5)$

$D(-5, 3)$

$E(0, -4)$

$F(4, 5)$

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

(a) $y = 2x - 4$

(b) $3x - 5y = 15$

(c) $2x - 7y = 0$

(d) $x = -2$

(e) $y = 6$

5. Sketch the graph.

(a) $3x - 2y = 12$

(b) $y = 3x - 1$

(c) $3x - 6y = 0$

(d) $y = -4$

(e) $x = 3$

6. Find the approximate solution by graphing.

(a) $\begin{cases} y = 3x - 6 \\ 2x - 4y = 18 \end{cases}$

(b) $\begin{cases} 3x - 5y = 15 \\ 6x + 2y = 12 \end{cases}$

(c) $\begin{cases} 3x - 8y = 0 \\ x = 5 \end{cases}$

(d) $\begin{cases} x = 2y - 6 \\ y = 4 \end{cases}$

7. For each system of equations in problem 6 above use either the elimination method or the substitution method to solve for x and y exactly.

8. Use either the elimination method or the substitution method to solve for x and y .

(a) $\begin{cases} 2x - 3y = 15 \\ 5x + 2y = 10 \end{cases}$

(b) $\begin{cases} 2x - 4y = 10 \\ -3x + 6y = 15 \end{cases}$

(c) $\begin{cases} y = 2x - 6 \\ x = 4y - 5 \end{cases}$

(d) $\begin{cases} 2x - 6y = 12 \\ -3x + 9y = -18 \end{cases}$

9. A collection of dimes and quarters has a total of 60 coins and a total value of \$12.45.

Let d represent the number of dimes. Let q represent the number of quarters.

(a) Write an equation relating d and q to the total number of coins.

(b) Write an equation relating d and q to the total value of the coins.

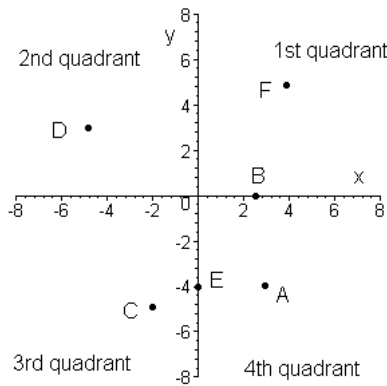
(c) Apply either the elimination method or the substitution method to your answers to parts (a) and (b) above to determine the number of quarters and the number of dimes.

Math 017 Answers to Review 4

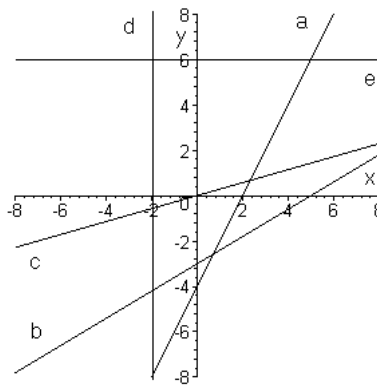
1. a, b, d, e, f, h, i.

2. (a) yes (b) no

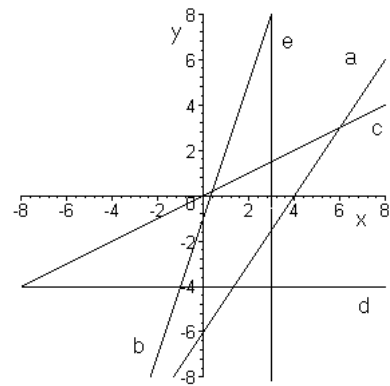
3.



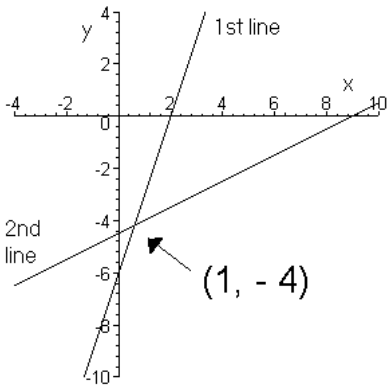
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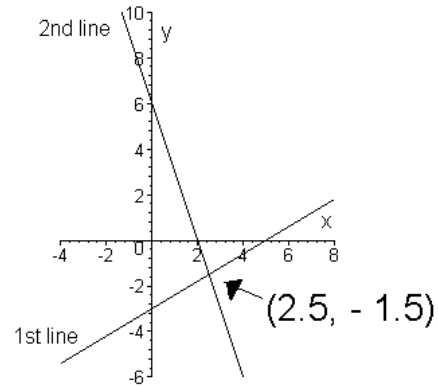
5.



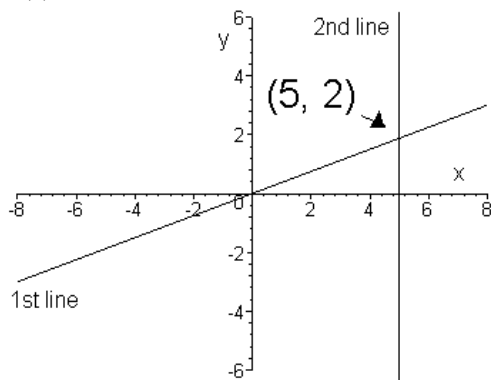
6. (a)



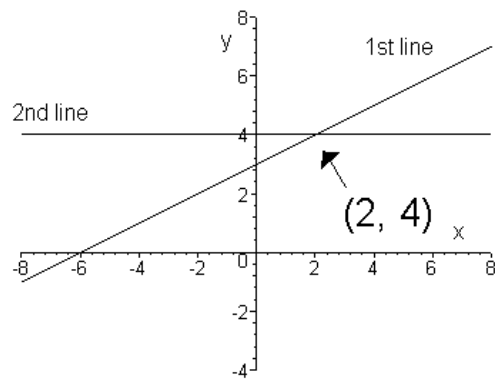
6. (b)



6. (c)



6. (d)



7. (a) $x = 3/5, y = -21/5$

(b) $x = 5/2, y = -3/2$

(c) $x = 5, y = 15/8$

(d) $x = 2, y = 4$

8. (a) $x = 60/19, y = -55/19$

(b) No solution. The lines are parallel.

(c) $x = 29/7, y = 16/7$

(d) Many solutions. These are two equations for the same line.

9. (a) $d + q = 60$ (b) $0.10d + 0.25q = 12.45$

(c) 43 quarters, 17 dimes