

1. Solve $P = \frac{1.2W}{H^2}$ for H

$H^2 = \frac{1.2W}{P}$

2. Sketch the inequality $-2x+4 > y$

$4 > 0$

3. Given the system: $3x - 2y = 12$ and $4x - y = 11$, what is the y value of the solution?

$$\begin{array}{r} 3x - 2(4x - 11) = 12 \\ 3x - 8x + 22 = 12 \\ -5x + 22 = 12 \\ -5x = -10 \\ x = 2 \end{array}$$

$$\begin{array}{r} -y = -4x + 11 \\ y = 4x - 11 \\ 4x - y = 11 \\ 4(2) - y = 11 \\ 8 - y = 11 \\ -y = 3 \\ y = -3 \end{array}$$

28. The only coins that Alexis has are dimes and quarters. Her coins have a total value of \$5.80. She has a total of 40 coins. Write a system of equations that can be used to find the number of dimes, d, and the number of quarters, q, Alexis has.

$$\begin{aligned} .10d + .25q &= 5.80 \\ d + q &= 40 \end{aligned}$$

29. The surface area S of a sphere of radius r is given by $S = 4\pi r^2$. Solve for r in terms of S .

$$\sqrt{\frac{S}{4\pi}} = r$$

30. The equation for an object that is launched from the ground is given by $h(t) = -16t^2 + v_0t$ where h is the height, t is the time, and v_0 is the initial velocity. What is the initial velocity of an object that is one-hundred feet off the ground four seconds after it is launched?

$$\begin{aligned} 100 &= -16(4)^2 + v_0(4) \\ 100 &= -256 + 4v_0 \\ 356 &= 4v_0 \\ v_0 &= 89 \text{ ft/sec} \end{aligned}$$

31. Solve the following equations:

a) $5(x+3) - 3x = 55$
 $5x + 15 - 3x = 55$
 $2x = 40$
 $x = 20$

d) $\frac{7}{3}y - 8 = 11\frac{1}{8}$
 $\frac{7}{3} \cdot \frac{1}{3}y = 119 \cdot \frac{3}{7}$
 $y = 51$

b) $5x^2 + 10x = 90$
 $5x^2 + 10x - 90 = 0$
 $5(x^2 + 2x - 18) = 0$
 $x = \frac{-2 \pm \sqrt{2^2 - 4(1)(-18)}}{2}$
 $x = 3, 3b; -5, 3b$

e) $\frac{2}{3}x + 9 < 8(\frac{1}{3}x - 2)$
 $\frac{2}{3}x + 9 < \frac{8}{3}x - 16$
 $-\frac{2}{3}x + 16 < -\frac{8}{3}x - 16$
 $\frac{25}{2} < 2x$
 $12.5 < x$

Redo
 $c) \left(\frac{5}{18} - \frac{x-2}{9} \leq \frac{x-4}{6}\right) 18$
 $5 - 2x - 4 \leq 3x - 12$
 $-2x + 1 \leq 3x - 12$
 $13 \leq 5x$
 $\frac{13}{5} \leq x$

f) $\frac{1}{5}(10 - 20x) \leq -14$
 $2 - 4x \leq -14$
 $-4x \leq -16$
 $x \geq 4$

g) $x^2 = 49$
 $x = \pm 7$

$(12.5 < x)$
 h) $3x^2 + 9 = 72$
 $3x^2 = 63$
 $x^2 = 21$
 $x = \pm \sqrt{21}$

i) $(x-4)^2 - 25 = 0$
 $(x^2 - 8x + 16) - 25 = 0$
 $x^2 - 8x - 9 = 0$
 $(x-9)(x+1) = 0$
 $x = 9, x = -1$

32. Jackson observed a graph with a y-intercept of 7 that passes through the point (2, 3). What is the slope of the line of Jackson's graph?

$$y = mx + b$$

$$3 = 2m + 7$$

$$\frac{-4}{2} = \frac{2m}{2}$$

$$-2 = m$$

33. What is the solution to the system?

$$\begin{array}{r} 1x - 2y = 4 \\ 6x + 2y = 18 \\ \hline 7x = 22 \\ x = \frac{22}{7} \end{array}$$

$$\begin{cases} x - 2y = 4 \\ 6x + y = 9 \end{cases} \cdot 2$$

$$\begin{array}{r} 22 \\ 7 \end{array} - 2y = 4$$

$$\frac{-22}{7} - 2y = \frac{-22}{7} - 4$$

$$\frac{-22}{7} - 2y = \frac{-22 - 28}{7}$$

$$\frac{-22}{7} - 2y = \frac{-50}{7}$$

$$-2y = \frac{-50}{7} + \frac{22}{7}$$

$$-2y = \frac{-28}{7}$$

$$y = \frac{-3}{7}$$

$$\left(\frac{22}{7}, -\frac{3}{7} \right)$$

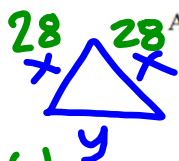
EOC Review: Systems

Math 1 Homework

Name: _____

Date: _____ Block: _____

1. The perimeter of a triangle is 75 cm. The triangle is isosceles now, but if its base were lengthened by 2 cm and each leg were shortened by 7 cm, it would be equilateral. Find the length of the base of the original triangle.



A) 21 cm

B) 18 cm

C) 19 cm

D) 28 cm

$$2x + y = 75$$

$$x - 7 = y + 2$$

$$x - 9 = y - 2$$

$$2x + x + 9 = 75$$

$$3x = 84$$

$$x = 28$$

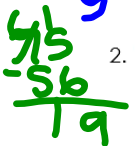
2. How many liters (L) of a 10% alcohol solution must be mixed with 50 L of a 90% solution to get a 50% solution?

A) 5 L

B) 10 L

C) 100 L

D) 50 L



amt	%
50	10
50	90
<u>100</u>	<u>50</u>

$$10x + 50(90) = 50(x + 50)$$

3. How many liters (L) of a 10% silver iodide solution must be mixed with 9 L of a 4% silver iodide solution to get a 6% solution?

A) 4.5 L

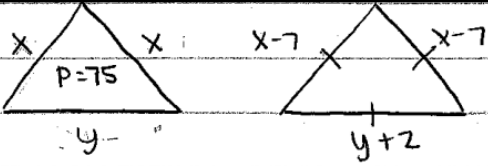
B) 9.0 L

C) 5.5 L

D) 3.5 L

1. Systems Worksheet

~~2. p. 6?~~

1.  (C)

$$2x + y = 75$$

$$2(y+9) + y = 75$$

$$3y = 57$$

$$y = 19$$

$$x - 7 = y + 2$$

$$2y + 18 + y = 75$$

$$3y + 18 = 75$$

$$\rightarrow x = y + 9$$

2.

	%	Amt
Mix A	10	x
Mix B	90	50
Total =	50	x+50

$$10x + 90(50) = 50(x+50)$$

$$10x + 4500 = 50x + 2500$$

$$2000 = 40x$$

$$x = 50$$
 (D)

3.

	%	Amt
Mix A	10	x
Mix B	4	9
Total	6	x+9

$$10x + 4(9) = 6(x+9)$$

$$10x + 36 = 6x + 54$$

$$4x = 18$$

$$x = 4.5$$
 (A)

4.

	%	Amt	
Mix A	7	x	$7x + 17(4) = 11(x+4)$
Mix B	17	4	$7x + 68 = 11x + 44$
Total	11	$x+4$	$24 = 4x$
			$x = 6$ (C)

5.

$$\begin{aligned} d + q &= 19 \quad -10 \\ 10d + 25q &= 370 \\ \hline -10d - 10q &= -190 \\ \hline 15q &= 180 \\ q &= 12 \end{aligned}$$

(A)

6.

$$\begin{aligned} W + L &= 40 \\ W &= L + 18 \end{aligned}$$

$$\begin{aligned} L + 18 + L &= 40 \\ 2L + 18 &= 40 \\ 2L &= 22 \\ L &= 11 \end{aligned}$$

$$\begin{aligned} W + 11 &= 40 \\ W &= 29 \end{aligned}$$

(C)

7.

$$2x - y > 4$$

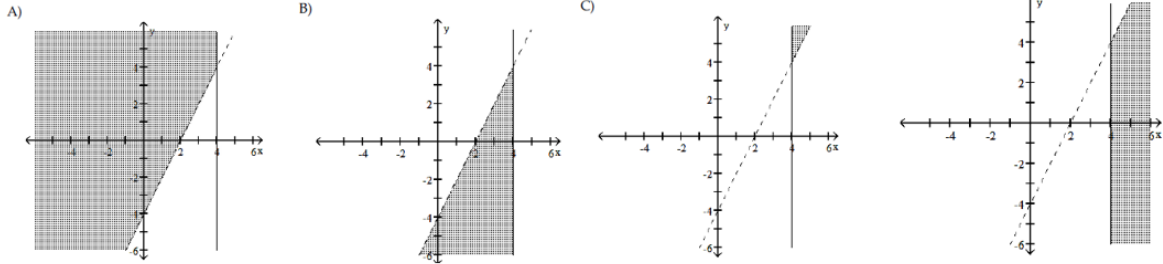
$$\frac{-y}{-1} > \frac{-2x + 4}{-1}$$

$$y < 2x - 4$$

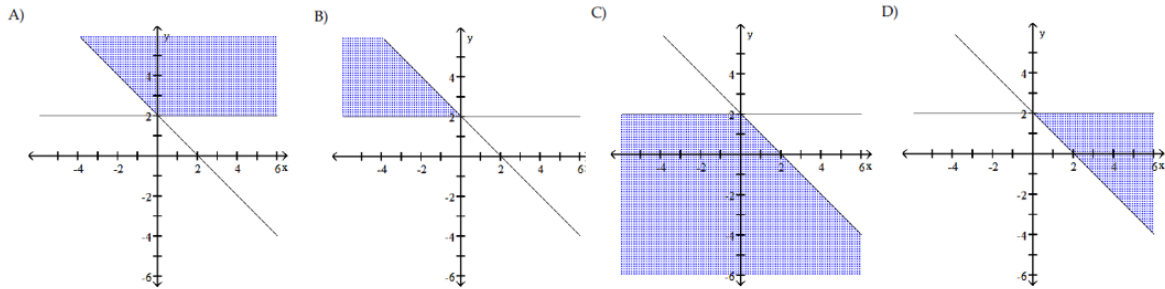
↑ less than ↑ y-int.

(B)

7. Graph $2x - y > 4$ and $x \leq 4$



8. Graph $x + y \geq 2$ and $y \leq 2$



9. Select the coordinate point that is a solution to this system of equations.

$$\begin{aligned} 2x + y &= 7 \\ 3x - 4y &= 5 \end{aligned}$$

- a) (-1,9)
- b) (-3,-1)
- c) (7,4)
- d) (3,1)

10. Solve this system of equations: $x = 2y - 8$
 $4x + y = 13$

- a) (2,-5)
- b) (-2,5)
- c) (2,5)
- d) (-2,-5)

- 4.) A contractor mixes concrete from bags of pre-mix for small jobs. How many bags with 7% cement should he mix with 4 bags of 17% cement to produce a mix containing 11% cement?
- A) 8 bags B) 10 bags C) 6 bags D) 15 bags
5. A sum of money amounting to \$3.70 consists of dimes and quarters. If there are 19 coins in all, how many are quarters?
- A) 12 quarters B) 9 quarters C) 7 quarters D) 17 quarters
6. During the 1998-1999 Little League season, the Tigers played 40 games. They won 18 more games than they lost. How many games did they win that season?
- A) 31 games B) 26 games C) 29 games D) 11 games