

Algebra 1 Bellwork Thursday, March 3, 2016

1. You think that the perfect summer drink has 20% real lime juice. You've found two lime juice drinks that you will mix together. One of the drinks has 28% real lime juice which you think is too tart. Another drink has 12% lime juice which you think is too bland. How many ounces of each should you mix together to make 40 ounces of 20% real lime juice?

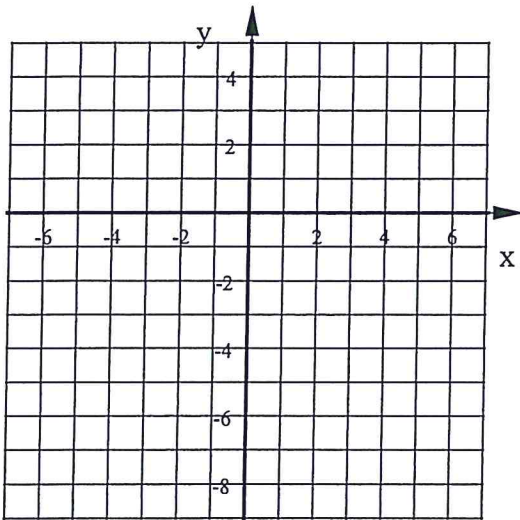
ounces of 28% =

ounces of ~~16%~~ ^{12%} =

2. Use this system of equations: $y = 5x - 9$ & $10x + 2y = 10$

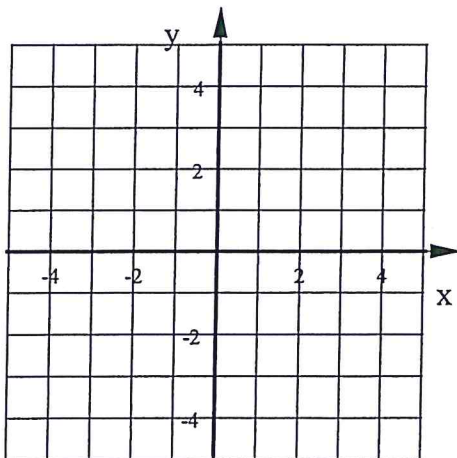
a) Solve the system by graphing.

b) Solve this system using Algebra (Substitution or Elimination)

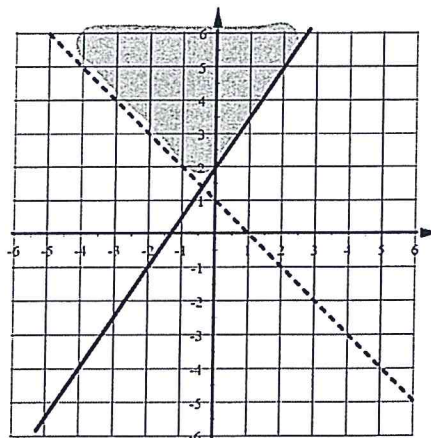


3. Graph this system of inequalities. Shade the solution region a different color than either inequality.

$$y \leq -\frac{1}{3}x \quad 9x - 18y \leq 36$$



4. Write the system of inequalities that this graph represents.



5. Without graphing tell the number of solutions to each system of equations: ONE, NONE, or MANY.

a) $y = 3x + 7$
 $12x - 4y = 40$

b) $y = 4$
 $y = 4x - 9$

c) $y = -\frac{1}{2}x + 3$
 $3x + 6y = 18$

6. Solve this system of equations. State your answer as an ordered pair.

$$6c - 4d = -40$$
$$4c + 9d = 55$$

Algebra 1 Bellwork Thursday, March 3, 2016 Answers

1. You think that the perfect summer drink has 20% real lime juice. You've found two lime juice drinks that you will mix together. One of the drinks has 28% real lime juice which you think is too tart. Another drink has 12% lime juice which you think is too bland. How many ounces of each should you mix together to make 40 ounces of 20% real lime juice?

X ounces of 28% = 20

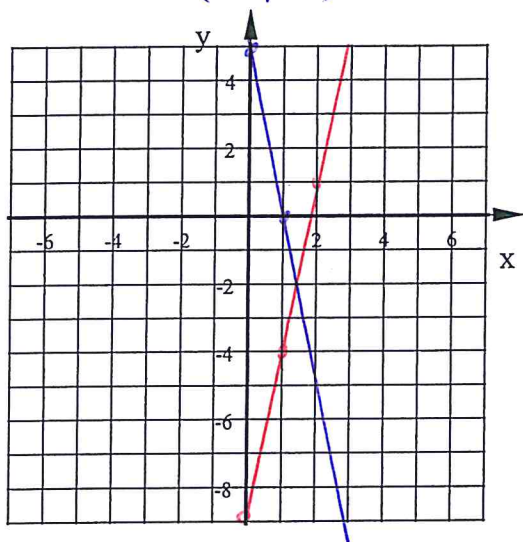
Y ounces of 12% = 20

$$\begin{aligned} .28(x + y) &= 40 \longrightarrow .28x + .28y = 11.2 \\ .28x + .12y &= (.20)40 \longrightarrow .28x + .12y = 8 \\ \hline .16y &= 3.2 \\ y &= 20 \end{aligned}$$

2. Use this system of equations:

a) Solve the system by graphing.

$\approx (1.5, -2)$



$y = 5x - 9$

&

$10x + 2y = 10$

$x - \text{int} = 1$
 $y - \text{int} = 5$

b) Solve this system using Algebra
(Substitution or Elimination)

$$10x + 2(5x - 9) = 10$$

$$10x + 10x - 18 = 10$$

$$20x - 18 = 10$$

$$20x = 28$$

$$x = 1.4$$

$$y = 5(1.4) - 9 = -2$$

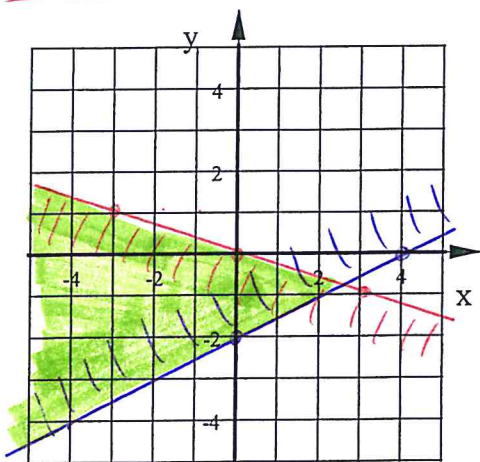
$(1.4, -2)$

3. Graph this system of inequalities.

Shade the solution region a different color than either inequality.

$y \leq -\frac{1}{3}x$

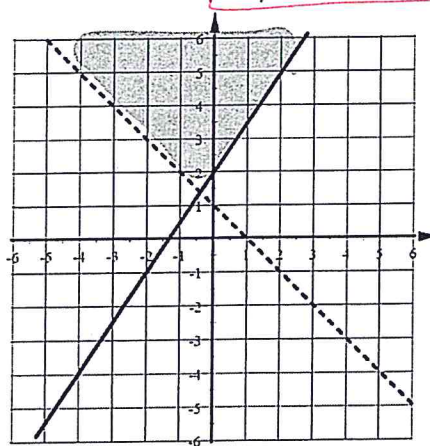
$9x - 18y \leq 36$



4. Write the system of inequalities that this graph represents.

$y \geq \frac{3}{2}x + 2$

$y > -x + 1$



5. Without graphing tell the number of solutions to each system of equations: ONE, NONE, or MANY.

a) $y = 3x + 7$
 $12x - 4y = 40$

$$y = \frac{40 - 12x}{-4}$$

$$y = -10 + 3x$$

parallel
Lines

NO
SOL

b) $y = 4 \rightarrow$ Horizontal line $m = 0$

$$y = 4x - 9$$

$m = 4$

diff slopes

ONE SOL

c) $y = -\frac{1}{2}x + 3$

$$3x + 6y = 18$$

$$y = \frac{18 - 3x}{6}$$

$$y = 3 - \frac{1}{2}x$$

same Line

MANY SOL's

6. Solve this system of equations. State your answer as an ordered pair.

$$2(6c - 4d = -40) \rightarrow$$

$$3(4c + 9d = 55) \rightarrow$$

$$12c - 8d = -80$$

$$12c + 27d = 165$$

$$-35d = -245$$

$$d = 7$$

Now
Find:
c

$$4c + 9(7) = 55$$

$$4c + 63 = 55$$

$$-63 \quad -63$$

$$4c = -8$$

$$\frac{4c}{4} = \frac{-8}{4}$$

$$c = -2$$

$(-2, 7)$