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?

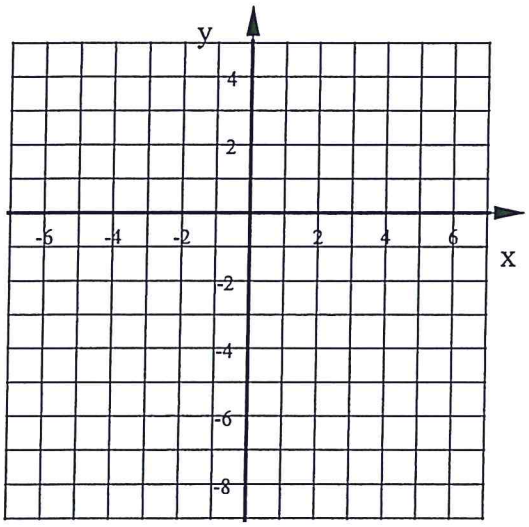
ounces of 28% =

ounces of ~~16%~~ 12% =

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

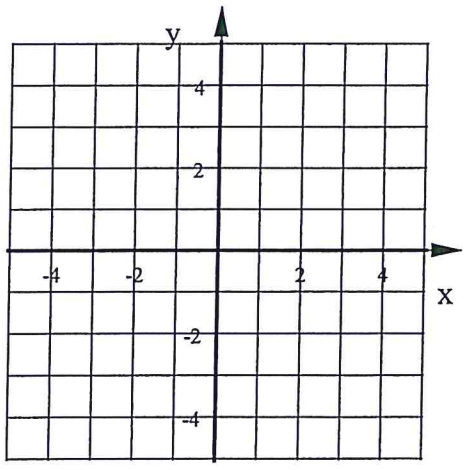
a) Solve the system by graphing.

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

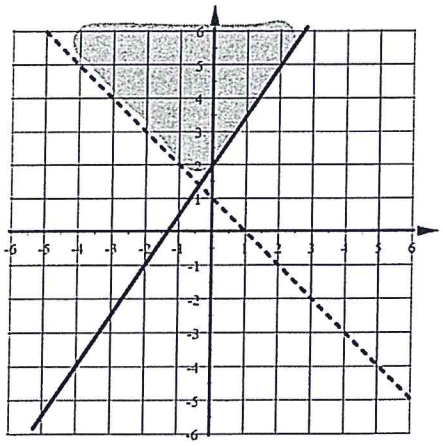


3. Graph this system of inequalities. Shade the solution region a different color than either inequality.

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



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 ~~16%~~ 12% = 20

$.28(x+y=40) \longrightarrow .28x + .28y = 11.2$

$.28x + .12y = (.20)40 \longrightarrow .28x + .12y = 8$

$.16y = 3.2$

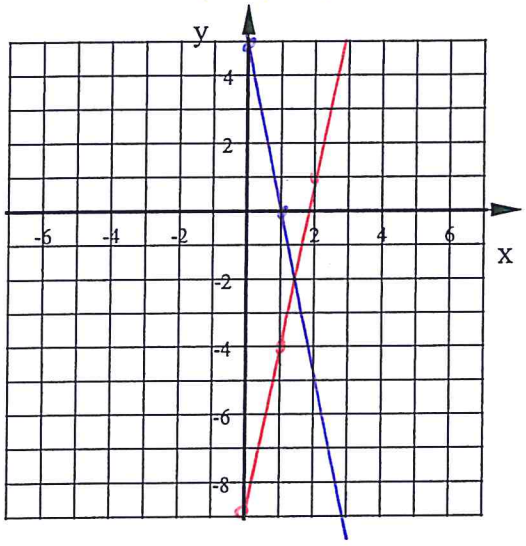
$\frac{.16y}{.16} = \frac{3.2}{.16}$

$y = 20$

2. Use this system of equations: $y = 5x - 9$ & $10x + 2y = 10$ x-int = 1, y-int = -5

a) Solve the system by graphing.

$\approx (1.5, -2)$



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

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

$10x + 10x - 18 = 10$

$20x - 18 = 10$

$+18 \quad +18$

$\frac{20x}{20} = \frac{28}{20}$

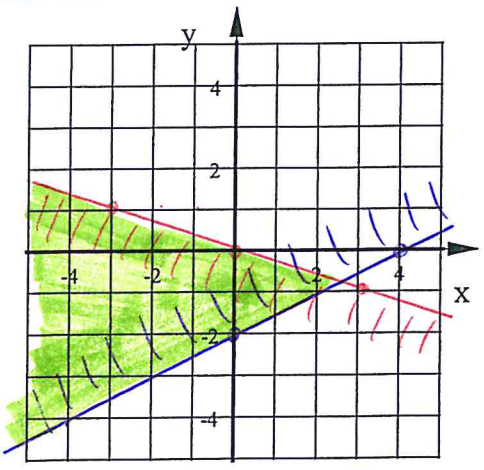
$x = 1.4$

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

$(1.4, -2)$

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

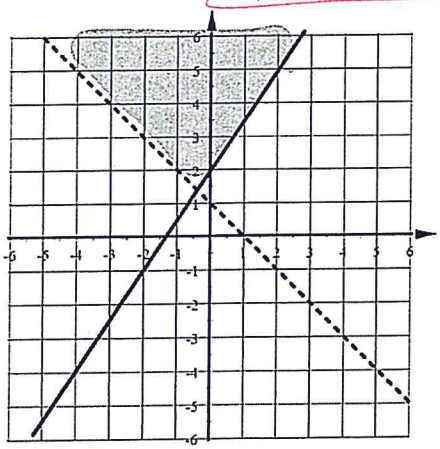
$y \le -\frac{1}{3}x$ $\qquad 9x - 18y \le 36$



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

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

$y > -x + 1$



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

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

parallel lines

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

$y = -10 + 3x$

NO SOL

b) $y = 4$ → 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.

$2(6c - 4d = -40)$ → $12c - 8d = -80$
$3(4c + 9d = 55)$ → $12c + 27d = 165$

$-35d = -245$

$d = 7$

Now Find c:

$4c + 9(7) = 55$

$4c + 63 = 55$
$-63 \quad -63$

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

$c = -2$

$(-2, 7)$