

Chapter 2 practice quiz- Algebra <sup>2</sup> Advanced

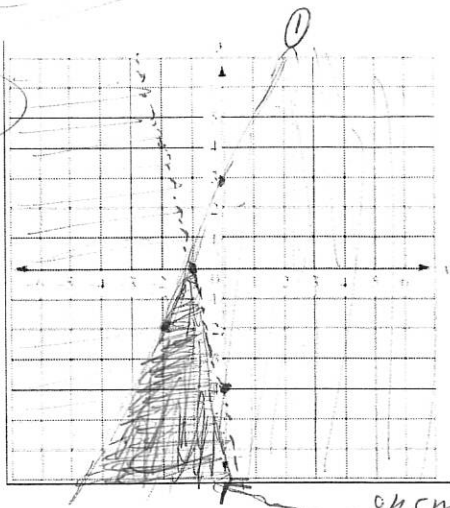
1. Solve each system of linear equations.

a.  $5x - 15y = -24$   $10x - 30y = -48$   
 $-2x + 6y = 28$   $\times 5 \Rightarrow -10x + 30y = 140$   
 $0 = 92$  false

No solution

typo!  
 $y = 5(1)$   
 $y = 5 - 2$   
 $y = 3$

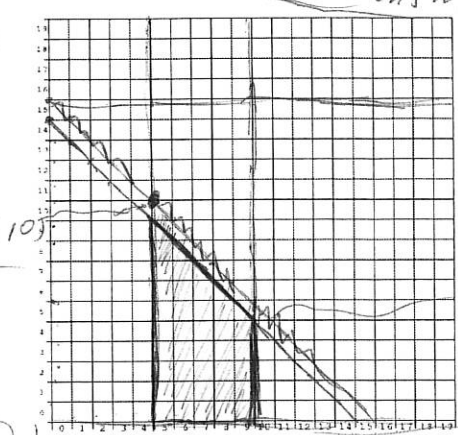
b.  $x + 2y = 7$   $x + z = 7$   $x + 2y = 7$   
 $y = 5x - 2$   $-5x + y = -2$   $10x - 2y = 4$   
 $11x = 11$   $x = 1$   
 $(1, 3)$



2. Solve the system of inequality by graphing.

(1)  $2y - 5x \leq 6$  (1)  $2y \leq 5x + 6$  (2)  $4x + y < -4$   
 $4x + y < -4$   
 $y \leq \frac{5}{2}x + 3$   
 $y < -4x - 4$   
 Test (0,0):  
 $0 < 0 + 3$  true  
 $0 < 3 + 0$  true  
 $0 < -4 - 4$  false

Test (0,0):  
 $0 < 0 + 3$   
 $0 < 3 + 0$



3. Each week, Mackenzie makes between 5 to 10 necklaces and 0 to 15 pairs of earrings. If she earns \$3 profit on each pair of earrings and \$5 on each necklace, and she plans to sell at least 15 pieces of jewelry, how can she maximize profit?

$y \geq 0$   
 $x \geq 0$   
 $5 \leq x \leq 10$   $m = -1, b = 15$   $y = \#$  of earrings  
 $0 \leq y \leq 15$   $y \leq -x + 15$   
 $x + y \leq 15$   $(0,0)$   $0 + 0 \leq 15$  true

$f(x, y) = 3x + 5y$   $(-2, -1, 4)$   $(x-4)$

4. Solve the system of equations.

(1)  $4x + 6y - z = -18$  (1) + (2)  $4x + 6y - z = -18$   
 (2)  $3x + 2y - 4z = -24$   
 (3)  $-5x + 3y + 2z = 15$   
 $3x + 2y - 4z = -24$   
 $3x + 2y - 4z = -24$

(1) + (2)  $4x + 6y - z = -18$   $\times 2$   
 $-5x + 3y + 2z = 15$   
 $8x + 12y - 2z = -36$   
 $-5x + 3y + 2z = 15$   
 $3x + 15y = -21$

$3x + 15y = -21$   
 $3x - 15y = 21$   
 $-39x - 66y = 144$   
 $39x + 195y = 273$

$y = -1$   $\frac{129y}{129} = \frac{-129}{129}$

$-16x - 24y + 4z = 6$   
 $3x + 2y - 4z = -24$   
 $-13x - 22y = 48$   
 $3x + 15y = -21 \times 13$

$3x = 6$   
 $x = 2$

(1)  $4(2) + 6(-1) - z = -18$   
 $8 - 6 - z = -18$   $-2 - z = -18$   $-z = -16$   $z = 16$

$x = \#$  of necklaces

$f(5, 10) = 3(5) + 5(10) = 15 + 50 = 65$   
 $f(10, 5) = 3(10) + 5(5) = 30 + 25 = 55$   
 $f(5, 0) = 3(5) + 5(0) = 15$   
 $f(10, 0) = 3(10) + 5(0) = 30$

5 necklaces, 10 earrings

$-z = 4$   $z = 4$