

Identify each pair of angles as corresponding, alternate interior, alternate exterior, or same-side interior. (2 points each)

1)

Alt. INT  $\angle$ s

Find the measure of each angle indicated. (5 points)

2)

$x = 53^\circ$

Solve for x. (5 points each)

3)

$7x - 6 = 5x + 10$   
 $2x - 6 = 10$   
 $2x = 16$   
 $x = 8$

Find the measure of the indicated angle that makes lines u and v parallel. (5 points each)

4)

$x + 69 = 180$   
 $x = 111$

Find the value of x that makes lines u and v parallel. (5 points each)

5)

$97 = 11x + 9$   
 $88 = 11x$   
 $8 = x$

6)

$19x + 4 = 21x - 4$   
 $4 = 2x - 4$   
 $8 = 2x$   
 $4 = x$

Solve for x. (5 points each)

7)

$32x + 73 + 43 = 180$   
 $32x + 116 = 180$   
 $32x = 64$   
 $x = 2$

8)

$10x + 12 = (82) + (4x + 2)$   
 $10x + 12 = 4x + 84$   
 $6x + 12 = 84$   
 $6x = 72$   
 $x = 12$

Write the equation of a line from the given information.

9) through:  $(-2, 5)$  and  $(0, -3)$

10) through:  $(-4, 2)$ , perp. to  $y = \frac{4}{5}x + 4$

Point  
 $(0, -3)$

slope  
 $m = \frac{\Delta y}{\Delta x}$   
 $= \frac{(5) - (-3)}{(-2) - (0)}$   
 $= \frac{8}{-2}$   
 $m = -4$

Point-slope form  
 $y - y_1 = m(x - x_1)$   
 $y + 3 = -4(x - 0)$

Point  
 $(-4, 2)$

Slope  
 $m = \frac{4}{5}$   
 $\perp m = -\frac{5}{4}$

Point-slope form  
 $y - y_1 = m(x - x_1)$   
 $y - 2 = -\frac{5}{4}(x + 4)$

**ALGEBRA REVIEW: Solve each equation. (1 point each)**

11)  $\frac{k}{4} - 3 = -4$   $k - 12 = -16$   
 $k = -4$

12)  $p - 5 = 3p + 9$   
 $-5 = 2p + 9$   
 $-14 = 2p$   
 $-7 = p$

**ALGEBRA REVIEW: Find each product. (1 point each)**

**ALGEBRA REVIEW: Factor the common factor out of each expression. (1 point each)**

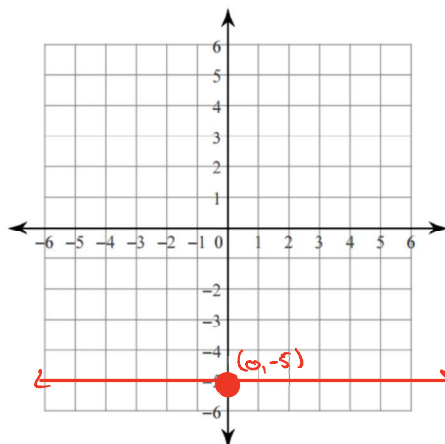
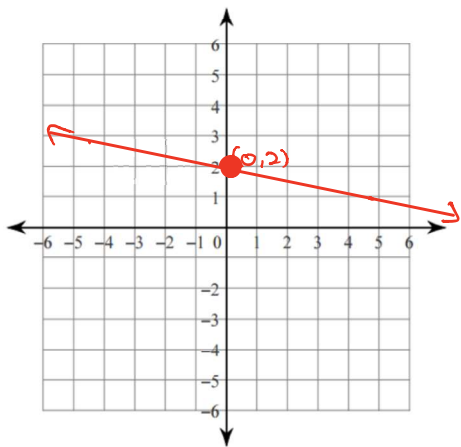
13)  $-4k^3(-k + 6) = 4k^4 - 24k^3$

14)  $48n^4 + 6n^3 = 6n^3(8n + 1)$

**ALGEBRA REVIEW: Sketch the graph of each line. (1 point each)**

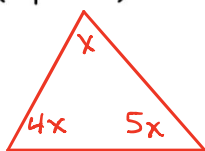
15)  $y = -\frac{1}{5}x + 2$

16)  $y = -5$



Unit 3 REVIEW Application/Extensions

- 1) In one triangle one of the angles is four times the measure of another and the third angle is five times as much as that angle. What are the measures of all three angles? (5 points)



$$x + 4x + 5x = 180$$

$$10x = 180$$

$$x = 18$$

$$4x = 4(18) = 72$$

$$5x = 5(18) = 90$$

The angles are  $18^\circ, 72^\circ, 90^\circ$

- 2) Mr. Kelly eats jelly beans out of a jar on his desk. After 1 week he has 9 jelly beans.

After 3 weeks he has 3 jelly beans. (2 points each)

- a) What's Mr. Kelly's slope (rate of change) for this situation?

$$m = \frac{\Delta y}{\Delta x} = \frac{(9)-(3)}{(1)-(3)} = \frac{6}{-2} = -3$$

- b) What's Mr. Kelly's y-intercept (initial value) for this situation?

Point  $(3, 3)$   
 $m = -3$

$$y - y_1 = m(x - x_1)$$

$$y - 3 = -3(x - 3)$$

$$y - 3 = -3x + 9$$

$$y = -3x + 12$$

initial value = 12

- c) Write an equation of the line for the given situation. Graph the line.

$$y = -3x + 12$$

- d) How much money would Mr. Kelly have after 2 months?

$$y = -3(2) + 12$$

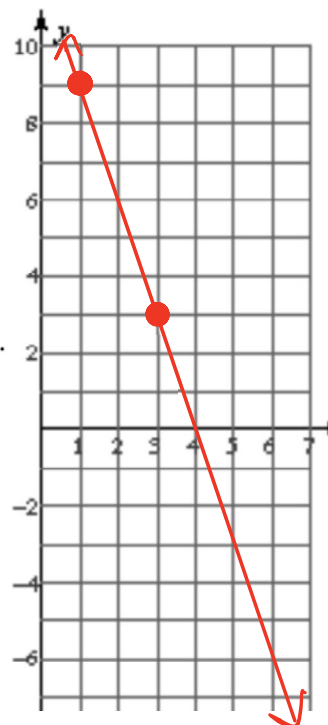
$$y = -6 + 12$$

$$y = 6$$

$-\$12$

- e) Mr. Brust has a line that is parallel to Mr. Kelly's but he starts with 20 jelly beans. What is the equation of the line for Mr. Brust?

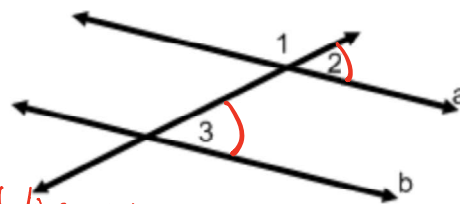
$y$ -int  $(0, 20)$     slope  $m = -3$     slope-int  $y - 20 = -3(x - 0)$   
 $1/m = -3$



- 3) Complete a flow proof or two-column proof for the following.

Given:  $\angle 1$  and  $\angle 3$  are supplementary

Prove:  $a \parallel b$



- |  |   |
|--|---|
| 1) $\angle 1$ and $\angle 3$ are suppl.      | 1) Given  |
| 2) $\angle 1$ and $\angle 2$ are linear pair | 2) Def'n of linear pair                                     |
| 3) $\angle 1$ and $\angle 2$ are suppl.      | 3) Supplement Theorem                                       |
| 4) $\angle 3 \cong \angle 2$                 | 4) $\angle$ s supplementary to the same angle are congruent |
| 5) $a \parallel b$                           | 5) Converse to corr $\angle$ s post.                        |

# Transversals

Chapter 3 Review 1

Name \_\_\_\_\_