

### GEOMETRY CHAPTER 3 REVIEW

BE SURE TO:

- \*Read the directions carefully and answer what the question is asking
- \*If you get stuck, look back to the section in your notes the problem comes from. This is probably a hint that you should spend more time studying this section.

#### 3.5 Slope

Find the slope of the line through each pair of points.

$$M = \frac{y_2 - y_1}{x_2 - x_1}$$

1)  $(-8, -4), (8, -6)$   
 $\frac{(-6) - (-4)}{8 - (-8)} = \frac{-2}{16} = \boxed{-\frac{1}{8}}$

2)  $(6, -11), (4, -14)$   
 $\frac{(-14) - (-11)}{4 - 6} = \frac{-3}{-2} = \boxed{\frac{3}{2}}$

3)  $(-2, 18), (-13, -18)$   
 $\frac{-18 - 18}{-13 - (-2)} = \frac{-36}{-11} = \boxed{\frac{36}{11}}$

Find the slope of the line parallel to each given line. *same slope.*

4)  $y = -\frac{7}{3}x + 3$   
 $\boxed{-\frac{7}{3}}$

5)  $y = 3x + 1$   
 $\boxed{\frac{3}{1}}$

6)  $y = \frac{3}{4}x - 2$   
 $\boxed{\frac{3}{4}}$

Find the slope of the line perpendicular to each given line.  $\rightarrow$  opposite reciprocals

7)  $y = \frac{1}{2}x + 2$   
 $\boxed{-\frac{2}{1}}$

8)  $y = -\frac{3}{4}x - 3$   
 $\boxed{\frac{4}{3}}$

9)  $y = \frac{7}{3}x + 3$   
 $\boxed{-\frac{3}{7}}$

#### 3.6 Linear Equations

Write the equation of the line in slope-intercept form passing through the given points.

10)  $(-2, -3)$  and  $(-4, 3)$  Find  $m$ , then pick a point to solve for  $b$ .

11)  $(-5, -5)$  and  $(-3, -1)$

$m = \frac{3 - (-3)}{-4 - (-2)} = \frac{6}{-2} = \boxed{-3 = m}$

$m = \frac{-1 - (-5)}{-3 - (-5)} = \frac{4}{2} = \boxed{2 = m}$

$y = -3x + b$   
 $3 = (-3)(-4) + b$   
 $3 = 12 + b$   
 $-9 = b$   
 $\boxed{y = -3x - 9}$

$y = 2x + b$   
 $-1 = 2(-3) + b$   
 $-1 = -6 + b$   
 $+4 = b$   
 $\boxed{y = 2x + 5}$

12) What is the equation of the line with slope 8 through the point  $(-4, -5)$ .

$y = 8x + b$   
 $-5 = 8(-4) + b$   
 $-5 = -32 + b$   
 $+32 = +32$   
 $27 = b$   
 $\boxed{y = 8x + 27}$

### 3.6 Continued

Write the equation of the line that best models the table.

12)

X	Y
1	-3
3	1
5	5
7	9

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

$$y = mx + b$$

$$1 = 2(3) + b$$

$$1 = 6 + b$$

$$\begin{array}{r} -6 \\ -6 \end{array}$$

$$-5 = b$$

$$y = 2x - 5$$

13)

x	y
3	0.45
5	0.75
7	1.05
10	1.50

$$(3, 0.45) \quad (5, 0.75)$$

$$x_1 \quad y_1 \quad x_2 \quad y_2$$

$$m = \frac{0.75 - 0.45}{5 - 3} = \frac{0.3}{2} = 0.15$$

$$y = mx + b$$

$$0.45 = 0.15(3) + b$$

$$0.45 = 0.45 + b$$

$$0 = b$$

$$y = 0.15x$$

14) Circle the table that represents the function  $y = 4x + 3$  ?

x	y
0	3
1	4
2	8
3	12

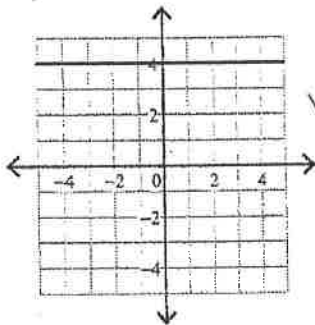
x	y
4	11
5	12
6	13
7	14

x	y
0	3
2	11
4	19
6	27

x	y
1	7
2	11
3	17
4	21

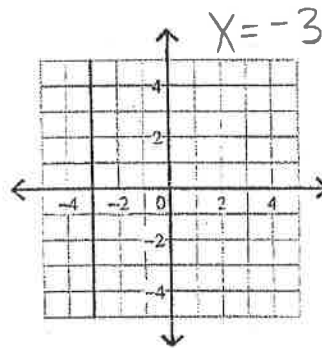
Write the equation of each line.

15.



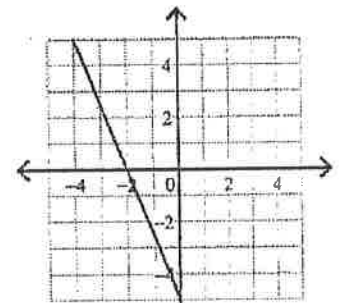
$$y = 4$$

16.



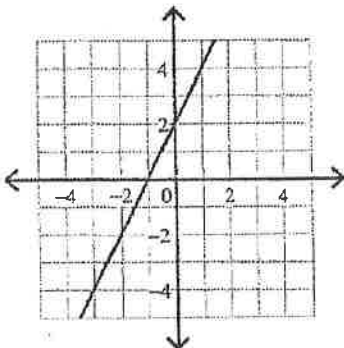
$$x = -3$$

17.



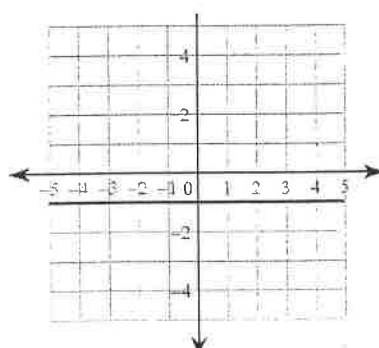
$$y = -\frac{5}{2}x - 5$$

18.



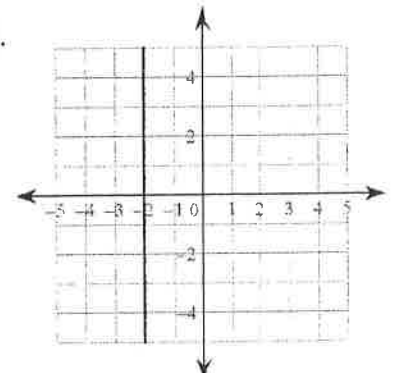
$$y = 2x + 2$$

19.



$$y = -1$$

20.

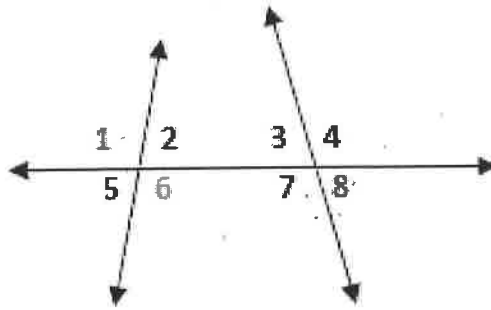


$$x = -2$$

3.2 - 3.3 - Parallel Lines and Angle Pairs.

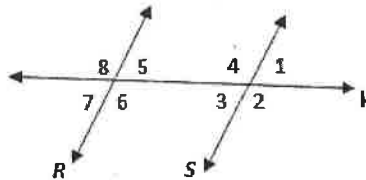
Match the correct angle pair with the given set of angles.

- A. Alternate Interior
- B. Same Side Interior
- C. Alternate Exterior
- D. Corresponding
- E. Vertical
- F. Linear Pair
- G. No Relationship



- 21.  $\angle 1, \angle 8$  C
- 22.  $\angle 3, \angle 6$  A
- 23.  $\angle 3, \angle 7$  F
- 24.  $\angle 1, \angle 6$  E
- 25.  $\angle 5, \angle 8$  G
- 26.  $\angle 2, \angle 4$  D
- 27.  $\angle 6, \angle 7$  B

Fill in the Blanks.



by (what theorem?)

- 28. If R is parallel to S, then the corresponding angles are congruent by Corr.  $\angle$ 's Postulate.
- 29. If R is parallel to S, then alternate interior angles are congruent by Alt Int  $\angle$ 's Thm.
- 30. If R is parallel to S, then same side interior angles are Supplementary by Same Side Int  $\angle$ 's Thm.
- 31. If R is parallel to S, then the alternate exterior angles are congruent by Alt. Ext  $\angle$ 's Thm.
- 32. If  $\angle 2$  and  $\angle 6$  are congruent, then R is Parallel to S by Converse of Corr  $\angle$ 's Post.
- 33. If  $\angle 3$  and  $\angle 6$  are Supplementary, then R is Parallel to S by Converse of Same Side Int  $\angle$ 's Thm.
- 34. If  $\angle 1$  and  $\angle 7$  are congruent, then R is Parallel to S by Converse of Alt Ext  $\angle$ 's Thm.
- 35. If  $\angle 3$  and  $\angle 5$  are congruent, then R is Parallel to S by converse of alt int  $\angle$ 's Thm.

36. Given  $\angle 1 = 4x - 3$  and  $\angle 7 = 3x + 4$ , find the value of x that makes R and S parallel lines.

$$4x - 3 = 3x + 4$$

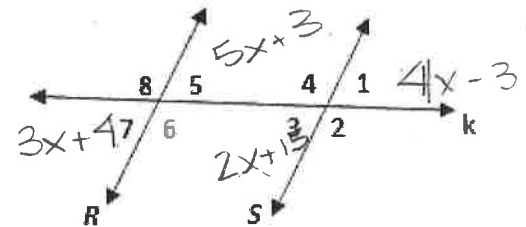
$$+3 \quad +3$$

$$4x = 3x + 7$$

$$-3x \quad -3x$$

$$x = 7$$

X=7



37. If R and S are parallel lines and  $\angle 3 = 2x + 15$  and  $\angle 5 = 5x + 3$ , find the measure of  $\angle 2$ .

$$2(4) + 15$$

$$8 + 15$$

$$m\angle 3 = 23$$

$$m\angle 2 = 180 - 23$$

$$m\angle 2 = 157^\circ$$

$$2x + 15 = 5x + 3$$

$$-3 \quad -3$$

$$2x + 12 = 5x$$

$$-2x \quad -2x$$

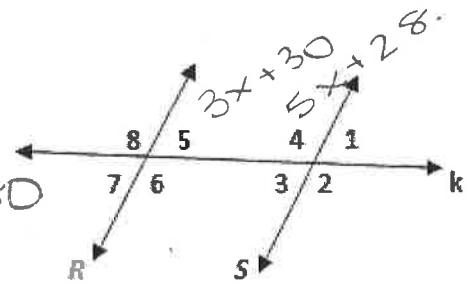
$$12 = 3x$$

$$\frac{12}{3} = \frac{3x}{3}$$

$$4 = x$$

38. If R and S are parallel lines and  $\angle 5 = 3x + 30$  and  $\angle 4 = 5x + 22$ ; find the measure of  $\angle 2$ .

$$\begin{aligned}
 3x + 30 + 5x + 22 &= 180 \\
 8x + 52 &= 180 \\
 -52 &\quad -52 \\
 \hline
 8x &= 128 \\
 \frac{8x}{8} &= \frac{128}{8} \quad x = 16
 \end{aligned}$$

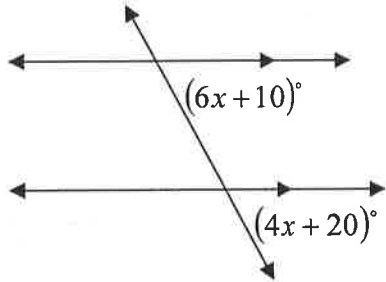


$$m\angle 4 = 5(16) + 22 = 102^\circ$$

$$m\angle 2 = m\angle 4 = 102^\circ$$

Find the value of all missing variables.

39.

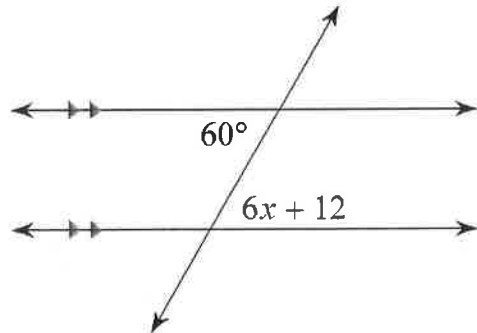


$$\begin{aligned}
 6x + 10 &= 4x + 20 \\
 -4x &\quad -4x
 \end{aligned}$$

$$\begin{aligned}
 2x + 10 &= 20 \\
 -10 &\quad -10
 \end{aligned}$$

$$x = 5$$

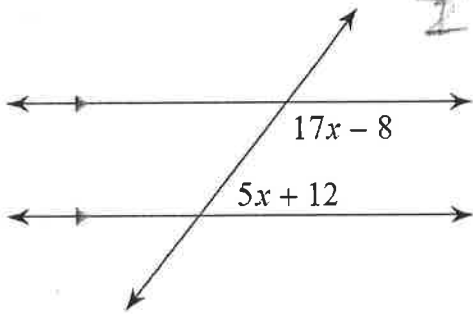
40.



$$\begin{aligned}
 60 &= 6x + 12 \\
 -12 &\quad -12
 \end{aligned}$$

$$\begin{aligned}
 48 &= 6x \\
 \frac{48}{6} &= \frac{6x}{6} \quad 8 = x
 \end{aligned}$$

41.



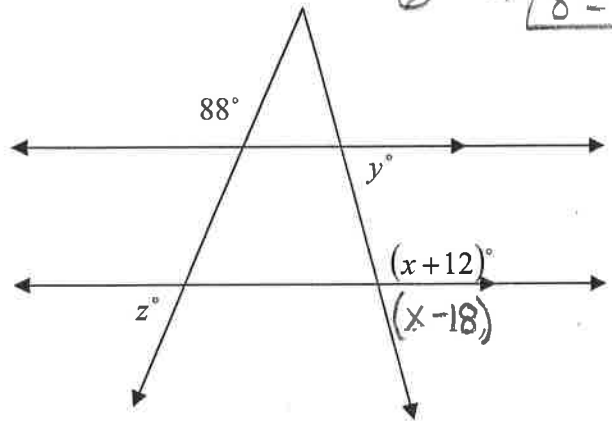
$$17x - 8 + 5x + 12 = 180$$

$$22x + 4 = 180$$

$$\begin{aligned}
 \frac{22x}{22} &= \frac{176}{22}
 \end{aligned}$$

$$x = 8$$

42.



$$(x + 12) + (x - 18) = 180$$

$$\begin{aligned}
 2x - 6 &= 180 \\
 +6 &\quad +6
 \end{aligned}$$

$$\begin{aligned}
 \frac{2x}{2} &= \frac{186}{2}
 \end{aligned}$$

$$x = 93^\circ$$

$$y = x - 18$$

$$y = 93 - 18$$

$$y = 75^\circ$$

$$z = 180 - 88$$

$$z = 92^\circ$$