

Name: Key

Date: _____

Block: _____

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) $(-8, -4), (8, -6)$

2) $(6, -11), (4, -14)$

3) $(-2, 18), (-13, -18)$

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

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

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

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

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

5) $y = 3x + 1$

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

$$\boxed{\frac{-7}{3}}$$

$$\boxed{\frac{3}{1}}$$

$$\boxed{\frac{3}{4}}$$

Find the slope of the line perpendicular to each given line. *→ opposite reciprocals*

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

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

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

$$\boxed{\frac{-2}{1}}$$

$$\boxed{\frac{4}{3}}$$

$$\boxed{\frac{-3}{7}}$$

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 $(-3, -1)$

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

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

$$y = -3x + b$$

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

$$y = 2x + b$$

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

$$-1 = -6 + b$$

$$+4 = +4 \quad \boxed{5 = b}$$

$$\boxed{y = 2x + 5}$$

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

$$y = 8x + b$$

$$-5 = 8(-4) + b \quad 27 = b$$

$$-5 = -32 + b$$

$$\boxed{y = 8x + 27}$$

3.6 Continued

Key

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

Pick 2 points.

12)

$(x_1, y_1) = (1, -3)$ $(x_2, y_2) = (3, 1)$

13)

$(x_1, y_1) = (7, .45)$ $(x_2, y_2) = (5, .75)$

X	Y
1	-3
3	1
5	5
7	9

$\frac{1+3}{3-1} = \frac{4}{2} = 2 = m$

x	y
3	0.45
5	0.75
7	1.05
10	1.50

$\frac{.75 - .45}{5 - 7} = \frac{.3}{-2} = -.15$

$y = 2x - 5$

$y = mx + b$
 $1 = 2(3) + b$
 $1 = 6 + b$
 $-5 = b$

$y = .15x - .6$ $y = .15x + b$ $-.6 = b$

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

x	y
0	3
1	4
2	8
3	12

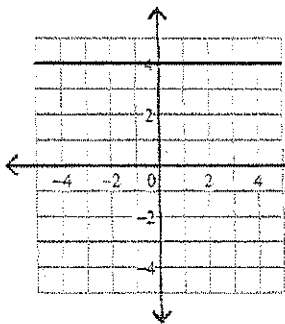
x	y
4	11
5	12
6	13
7	14

x	y
0	3
2	11
4	19
6	27

x	y
1	7
2	11
3	17
4	21

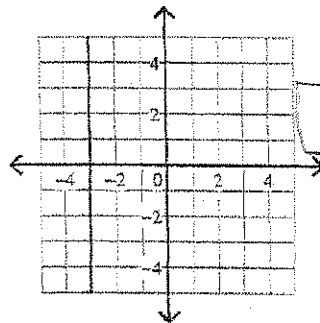
Write the equation of each line.

15.



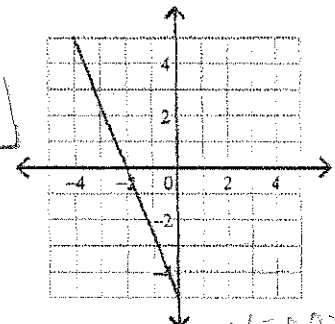
$y = mx + b$
 $y = 4$

16.



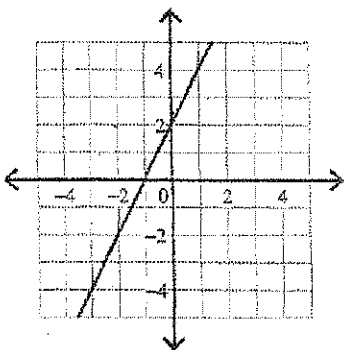
$x = -3$

17.



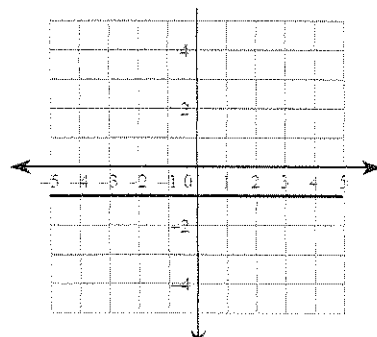
$y = mx + b$
 $y = \frac{5}{2}x - 5$

18.



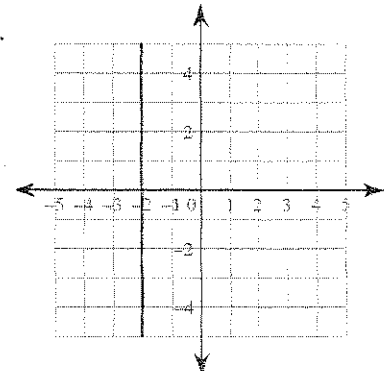
$y = mx + b$
 $y = 2x + 2$

19.



$y = -1$

20.

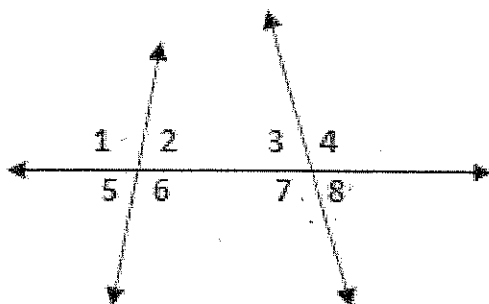


$x = -2$

3.2 - 3.3 - Parallel Lines and Angle Pairs.

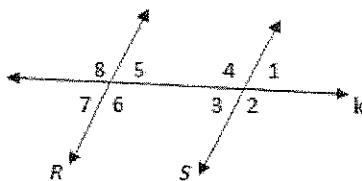
Match the correct angle pair with the given set of angles.

- 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.



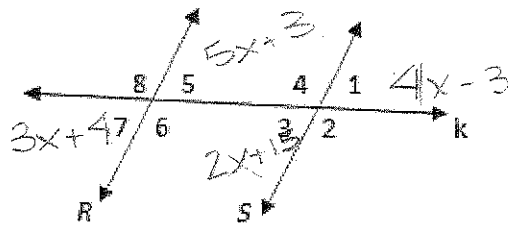
by (what theorem?)

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

$$\begin{aligned}
 4x - 3 &= 3x + 4 \\
 +3 & \quad +3 \\
 4x &= 3x + 7 \\
 -3x & \quad -3x \\
 x &= 7
 \end{aligned}$$

$x = 7$



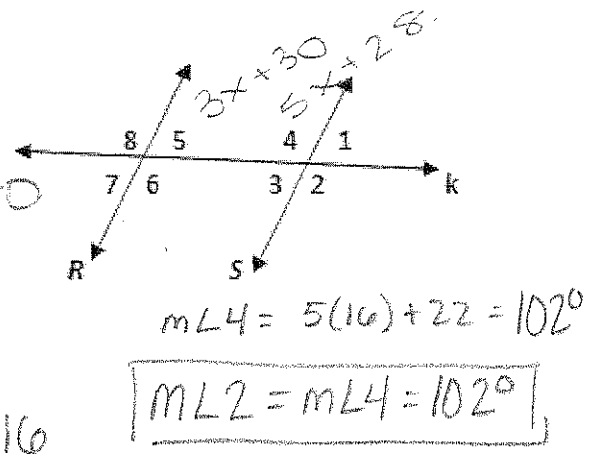
37. If R and S are parallel lines and $\angle 3 = 2x + 15$ and $\angle 5 = 5x + 3$, find the measure of $\angle 2$.

$$\begin{aligned}
 2(4) + 15 &= 5x + 3 \\
 8 + 15 &= 5x + 3 \\
 m\angle 3 &= 23 \\
 m\angle 2 &= 180 - 23 \\
 \boxed{m\angle 2 = 157^\circ}
 \end{aligned}$$

$$\begin{aligned}
 2x + 15 &= 5x + 3 \\
 -3 & \quad -3 \\
 2x + 12 &= 5x \\
 -2x & \quad -2x \\
 12 &= 3x \\
 \frac{12}{3} &= \frac{3x}{3} \\
 4 &= x
 \end{aligned}$$

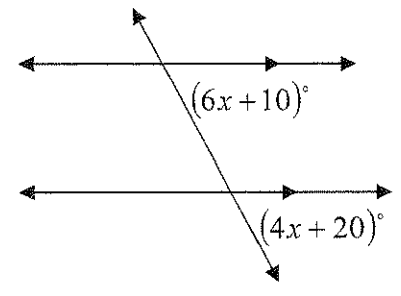
38. If R and S are parallel lines and $\angle 5 = 3x + 30$ and $\angle 4 = 5x + 22$, find the measure of $\angle 2$.

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



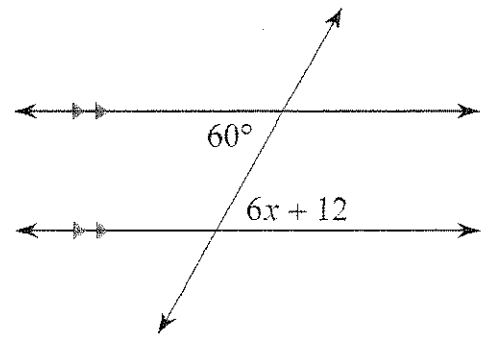
Find the value of all missing variables.

39.



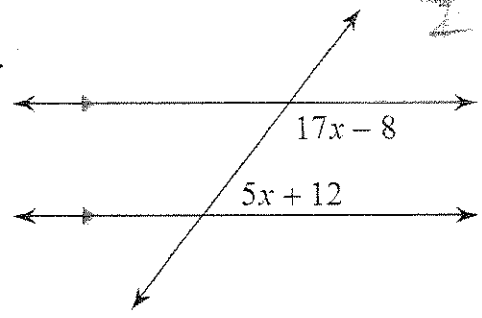
$$\begin{aligned}
 6x + 10 &= 4x + 20 \\
 -4x &\quad -4x \\
 \hline
 2x + 10 &= 20 \\
 -10 &\quad -10 \\
 \hline
 2x &= 10 \\
 \frac{2x}{2} &= \frac{10}{2} \quad \boxed{X=5}
 \end{aligned}$$

40.



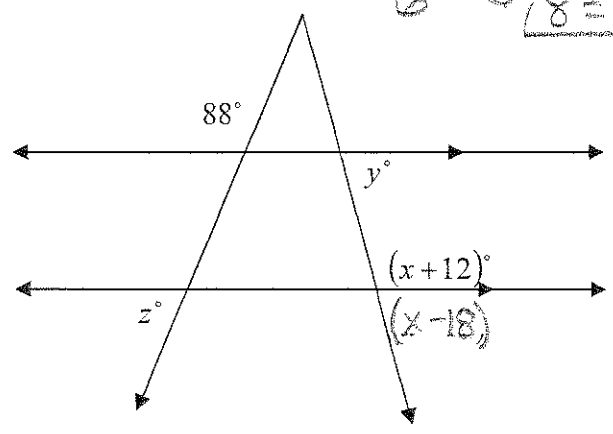
$$\begin{aligned}
 60 &= 6x + 12 \\
 -12 &\quad -12 \\
 \hline
 48 &= 6x \\
 \frac{48}{6} &= \frac{6x}{6} \quad \boxed{8=x}
 \end{aligned}$$

41.



$$\begin{aligned}
 17x - 8 + 5x + 12 &= 180 \\
 22x + 4 &= 180 \\
 \frac{22x}{22} &= \frac{176}{22} \\
 \boxed{X=8}
 \end{aligned}$$

42.



$$\begin{aligned}
 (x + 12) + (x - 18) &= 180 \\
 2x - 6 &= 180 \\
 +6 &\quad +6 \\
 \hline
 2x &= 186 \\
 \frac{2x}{2} &= \frac{186}{2} \\
 \boxed{X=93}
 \end{aligned}$$

$$\begin{aligned}
 y &= x - 18 \\
 y &= 93 - 18 \\
 \boxed{Y=75}
 \end{aligned}$$

$$\begin{aligned}
 z &= 180 - 88 \\
 \boxed{Z=92}
 \end{aligned}$$