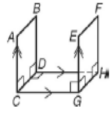


# Chapter 3 Review

## Lesson 3.1

For Exercises 5–8, identify each of the following in the figure.

5. a pair of parallel segments
6. a pair of skew segments
7. a pair of perpendicular segments
8. a pair of parallel planes




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Many Possibilities for #s 5-7!

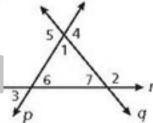
Identify the transversal and classify each angle pair.

- $\angle 4$  and  $\angle 6$

- $\angle 1$  and  $\angle 2$

- $\angle 3$  and  $\angle 4$

- $\angle 6$  and  $\angle 7$



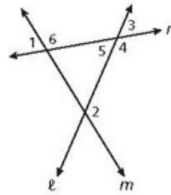
Identify the transversal and classify each angle pair.

- 10.  $\angle 5$  and  $\angle 2$

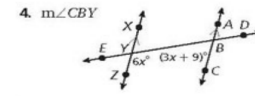
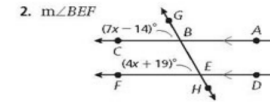
- 11.  $\angle 6$  and  $\angle 3$

- 12.  $\angle 2$  and  $\angle 4$

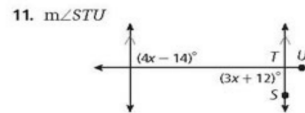
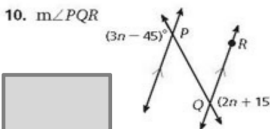
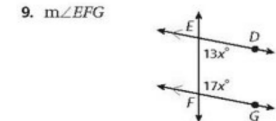
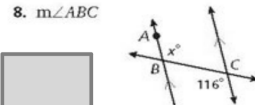
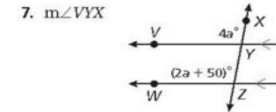
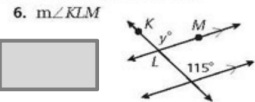
- 13.  $\angle 1$  and  $\angle 2$



## Lesson 3.2

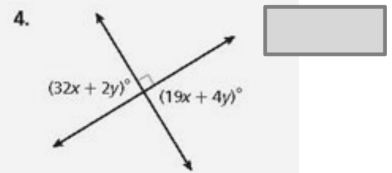
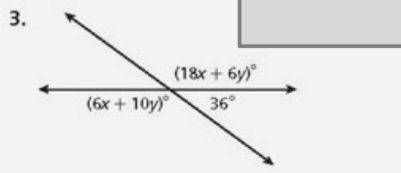
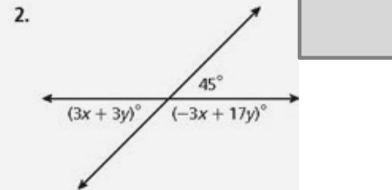
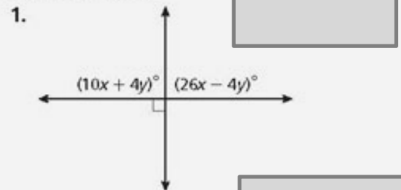


Find each angle measure.



## Lesson 3.2ish

Solve for x and y.



## Lesson 3.3

**Converse of the Corresponding Angles Postulate**

If two coplanar lines are cut by a transversal so that a pair of corresponding angles are congruent, then the two lines are parallel.

You can use the Converse of the Corresponding Angles Postulate to show that two lines are parallel.

Given:  $\angle 1 \cong \angle 3$

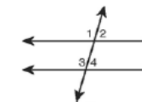
$$\angle 1 \cong \angle 3$$

$$q \parallel r$$

$\angle 1 \cong \angle 3$  are corresponding angles.

Converse of the Corresponding Angles Postulate

You can also prove that two lines are parallel by using the converse of any of the other theorems that you learned in Lesson 3-2.

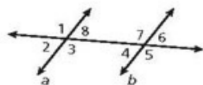


Theorem	Hypothesis	Conclusion
Converse of the Alternate Interior Angles Theorem	<p><math>\angle 2 \cong \angle 3</math></p>	$a \parallel b$
Converse of the Alternate Exterior Angles Theorem	<p><math>\angle 1 \cong \angle 4</math></p>	$f \parallel g$
Converse of the Same-Side Interior Angles Theorem	<p><math>m\angle 1 + m\angle 2 = 180^\circ</math></p>	$s \parallel t$

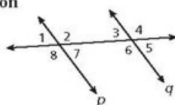
**3-3 Proving Lines Parallel**

Use the given information and the theorems and postulates you have learned to show that  $a \parallel b$ .

12.  $m\angle 8 = (13x + 20)^\circ$ ,  $m\angle 6 = (7x + 38)^\circ$ ,  $x = 3$
13.  $\angle 1 \cong \angle 5$
14.  $m\angle 8 + m\angle 7 = 180^\circ$
15.  $m\angle 8 = m\angle 4$
16. The tower shown is supported by guy wires such that  $m\angle 1 = (3x + 12)^\circ$ ,  $m\angle 2 = (4x - 2)^\circ$ , and  $x = 14$ . Show that the guy wires are parallel.



Use the given information and theorems and postulates you have learned to show that  $p \parallel q$ .

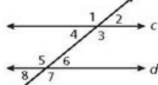


- $m\angle 2 + m\angle 3 = 180^\circ$

- $\angle 8 \cong \angle 6$

- $m\angle 1 = (7x - 3)^\circ$ ,  $m\angle 5 = 5x + 15$ ,  $x = 9$

Use the given information and theorems and postulates you have learned to show that  $c \parallel d$ .



18.  $m\angle 4 = 58^\circ$ ,  $m\angle 6 = 58^\circ$
19.  $m\angle 1 = (23x + 38)^\circ$ ,  $m\angle 5 = (17x + 56)^\circ$ ,  $x = 3$
20.  $m\angle 6 = (12x + 6)^\circ$ ,  $m\angle 3 = (21x + 9)^\circ$ ,  $x = 5$
21.  $m\angle 1 = 99^\circ$ ,  $m\angle 7 = (13x + 8)^\circ$ ,  $x = 7$

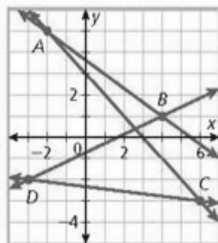
**3-5 Slopes of Lines**

Use the slope formula to determine the slope of each line.

1.  $\overline{AC}$
2.  $\overline{CD}$
3.  $\overline{AB}$
4.  $\overline{BD}$

Find the slope of the line through the given points.

5.  $M(2, 3)$  and  $N(0, 7)$
6.  $F(-1, 4)$  and  $G(5, -1)$
7.  $P(4, 0)$  and  $Q(1, -3)$
8.  $K(4, 2)$  and  $L(-3, 2)$
9. Sonia is walking 2.5 miles home from school. She leaves at 4:00 P.M., and gets home at 4:45 P.M. Graph the line that represents Sonia's distance from school at a given time. Find and interpret the slope of the line.



Graph each pair of lines and use their slopes to determine if they are parallel, perpendicular, or neither.

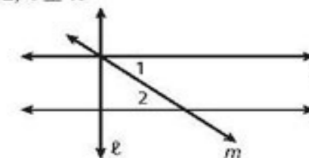
10.  $\overline{EF}$  and  $\overline{GH}$  for  $E(-2, 3)$ ,  $F(6, 1)$ ,  $G(6, 4)$ , and  $H(2, 5)$
11.  $\overline{JK}$  and  $\overline{LM}$  for  $J(4, 3)$ ,  $K(5, -1)$ ,  $L(-2, 4)$ , and  $M(3, -5)$
12.  $\overline{NP}$  and  $\overline{QR}$  for  $N(5, -3)$ ,  $P(0, 4)$ ,  $Q(-3, -2)$ , and  $R(4, 3)$
13.  $\overline{ST}$  and  $\overline{VW}$  for  $S(0, 3)$ ,  $T(0, 7)$ ,  $V(2, 3)$ , and  $W(5, 3)$

**3-4 Perpendicular Lines**

17. Write a two-column proof.

Given:  $\angle 1 \cong \angle 2$ ,  $\ell \perp n$

Prove:  $\ell \perp p$



Statements	Reasons
1. $\angle 1 \cong \angle 2$ ; $\ell \perp n$	1. _____
2. _____	2. _____
3. $\ell \perp p$	3. _____

**3-6 Lines in the Coordinate Plane**

Write the equation of each line in the given form.

14. the line through  $(3, 8)$  and  $(-3, 4)$  in slope-intercept form
15. the line through  $(-5, 4)$  with slope  $\frac{2}{3}$  in point-slope form
16. the line with  $y$ -intercept 2 through the point  $(4, 1)$  in slope-intercept form

Graph each line.

17.  $y = -2x + 5$
18.  $y + 3 = \frac{1}{4}(x - 4)$
19.  $x = 3$

Write the equation of each line.

- 20.
- 21.
- 22.

Determine whether the lines are parallel, intersect, or coincide.

23.  $y = -2x + 5$   
 $y = -2x - 5$
24.  $3x + 2y = 8$   
 $y = -\frac{3}{2}x + 4$
25.  $y = 4x - 5$   
 $3x + 4y = 7$