Geometry Chapter 3 Review
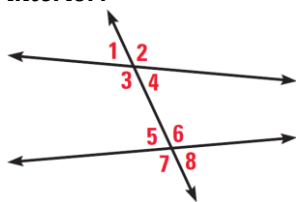
Classify the pairs of angles as *corresponding*, *alternate interior*, *alternate exterior*, or *consecutive interior*.
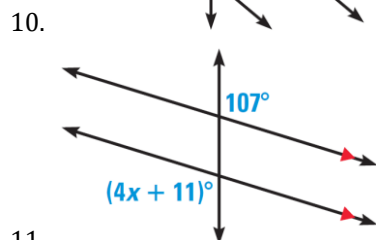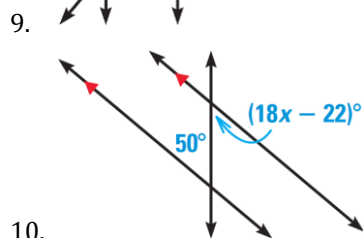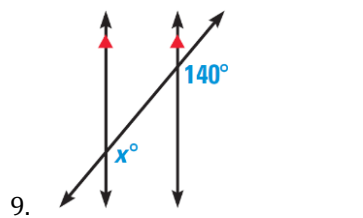

1. ∠1 and ∠8
2. ∠2 and ∠6
3. ∠3 and ∠5
4. ∠4 and ∠5

If the lines are parallel, tell whether the angle pair is *congruent*, *supplementary*, *complementary*, or *neither*.
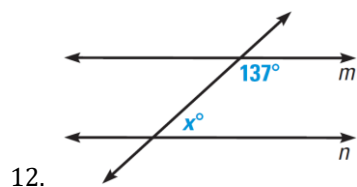
5. Corresponding Angles
6. Alternate Interior Angles
7. Alternate Exterior Angles
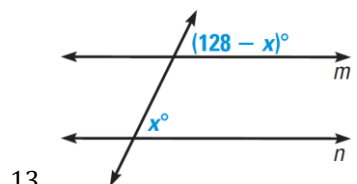8. Consecutive Interior Angles

Find the value of x.
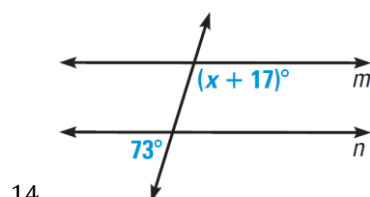

9.

10.

11.

Find the value of x that makes $m \parallel n$.
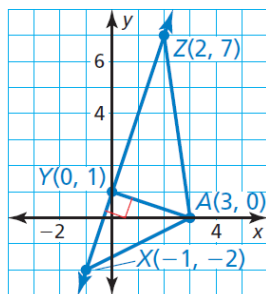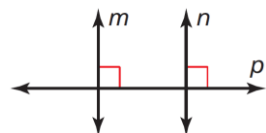

12.

13.

14.

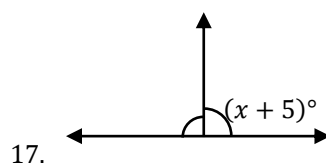**Find the distance from point A to $\overleftrightarrow{XZ}$.**

15.
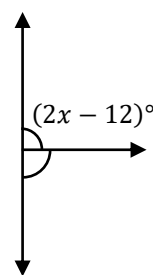
Which theorem specifies that $m \parallel n$?

16.

$\overline{AB} \perp \overline{BC}$. **Find the value of x.**

17.

18.

19. Find the coordinates of point P along the directed line segment AB so that AP to PB is the given ratio 4 to 5.
    $A(-4, 2)$ and $B(6, 22)$

Find the slope of the line that passes through the points.

20. $(3, -1), (3, 4)$

21. $(2, 7), (-1, -3)$

22. Are the lines passing through each pair of points *parallel*, *perpendicular*, or *neither*?
    Line 1: $(-7, 3)$ and $(-5, -1)$
    Line 2: $(-1, -4)$ and $(3, -2)$

Write an equation of the line that passes through point P and is parallel to the line with the given equation.
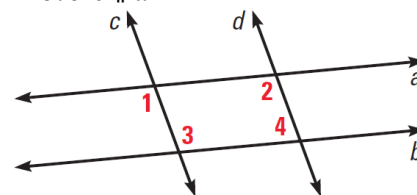
23. $P(0, 2), y = -x + 3$

Write an equation of the line that passes through point P and is perpendicular to the line with the given equation.

24. $P(1, 3), y = 2x - 1$

25. Write a two-column proof.
    Given: $a \parallel b, \angle 2 \cong \angle 3$
    Prove: $c \parallel d$

Answers

1. Alternate Exterior

2. Corresponding

3. Consecutive Interior

4. Alternate Interior

5. Congruent

6. Congruent

7. Congruent

8. Supplementary

9. 140

10. 4

11. 24

12. 43

13. 64

14. 90

15. $\sqrt{10}$

16. Lines Perpendicular to a Transversal Theorem

17. 85

18. 51

19. $\left(\frac{4}{9}, \frac{98}{9}\right)$

20. Undefined

21. $\frac{10}{3}$

22. Perpendicular

23. $y = -x + 2$

24. $y = -\frac{1}{2}x + \frac{7}{2}$

25.
$a \parallel b, \angle 2 \cong \angle 3$	Given
$m\angle 2 = m\angle 3$	Definition of $\cong$
$\angle 2$ and $\angle 4$ are supplementary	Consecutive Interior Angles Theorem
$m\angle 2 + m\angle 4 = 180°$	Definition of Supplementary
$m\angle 3 + m\angle 4 = 180°$	Substitution
$\angle 3$ and $\angle 4$ are supplementary	Definition of Supplementary
$c \parallel d$	Consecutive Interior Angles Converse

OR

$a \parallel b, \angle 2 \cong \angle 3$	Given
$\angle 1 \cong \angle 3$	Alternate Interior Angles Theorem
$\angle 1 \cong \angle 2$	Transitive
$c \parallel d$	Corresponding Angles Converse