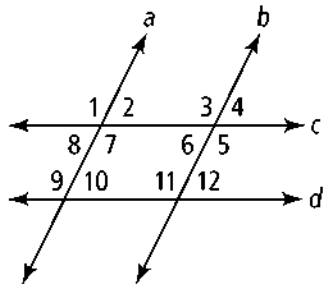


Chapter 3 Review Worksheet

Use the figure for Exercises 1–2.



1. For the following, suppose $a \parallel b$ and $c \parallel d$.

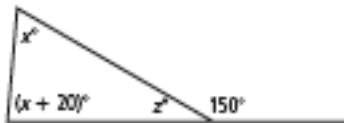
- $\angle 2$ and $\angle 10$ are what kind of angles?
- $\angle 3$ and what angle are alternate interior angles?
- $\angle 9$ and $\angle 8$ are what kind of angles?
- Which angle could you show is congruent to $\angle 11$ to prove $a \parallel b$?
- What relationship between $\angle 6$ and $\angle 11$ shows $c \parallel d$?

2. For the following, suppose $a \parallel b$ and $c \parallel d$.

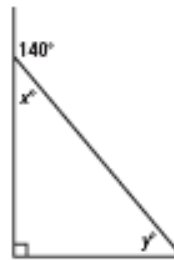
- If $m\angle 6 = 50$, then find $m\angle 11$.
- If $m\angle 2 = 70$, then find $m\angle 6$.
- If $m\angle 1 = 130$, then find $m\angle 5$.
- If $m\angle 7 = 110$, then find $m\angle 10$.
- If $m\angle 4 = 45$, then find $m\angle 12$.

3. Find the values of the variables.

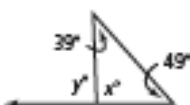
a.



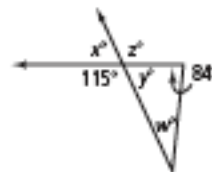
c.



b.



d.



4. Perform the following constructions:

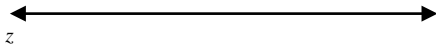
- a. Construct a line parallel to line b , passing through point A .

A

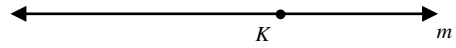


- b. Construct a perpendicular to line z at passing through point Y .

Y



- c. Construct a perpendicular to line m at point K .



- d. Construct a rectangle which has a width twice its height.

5. Determine whether the following pairs of lines are parallel, perpendicular, or neither. Explain or show work.

e. $y = 2x + 1$

$2x + y = 7$

g. $y = -4x + 1$

$4x + y = -3$

f. $y = \frac{1}{3}x + 4$

$3x + y = 2$

h. $y = 3x - 2$

$-3x + y = 5$

6. Show work or explain:

- a. What is the equation of the line parallel to $y = x - 1$ that contains the point $(1, 2)$?

- b. What is the equation of the line perpendicular to $y = \frac{1}{2}x + 1$ that contains the point $(-2, 1)$?

7. \overline{AB} contains points $(2, 1)$ and $(-1, -8)$. What is the equation of the line parallel to \overline{AB} that contains point $(0, 2)$?

8. Explain how perpendicular lines can be used to construct a line parallel to a given line.

9. Suppose a line intersecting two lines a and b forms a 35° angle with each line. What are the possible relationships between lines a and b ? Explain. (*Hint*: Draw a picture.)