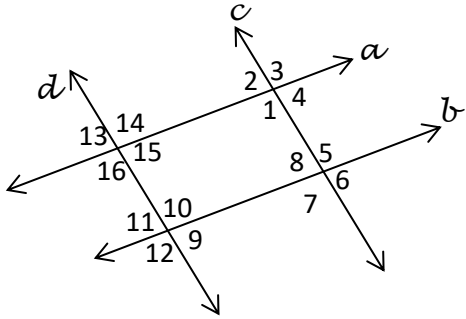


Geometry

Unit One B: Assessment Review #2 (HW39)

Using the diagram below, identify which lines are parallel if the information given is true. Write a reason to support your conclusion. If the information is not enough to prove any lines are parallel, just write NONE.



- a. $\angle 2 \cong \angle 6$: a & b Alt ext. \angle 's $\cong \rightarrow ||$ lines
- b. $\angle 8$ supp $\angle 10$: c & d s-s int \angle 's supp $\rightarrow ||$ lines
- c. $\angle 13 \cong \angle 10$: None s-s ext \angle 's should be supp, not \cong
- d. $\angle 12 \cong \angle 7$: c & d corr \angle 's $\cong \rightarrow ||$ lines
- e. $\angle 1 \cong \angle 14$: c & d Alt int. \angle 's $\cong \rightarrow ||$ lines
- f. $\angle 13 \cong \angle 15$: None Vertical angles
- g. $\angle 11$ supp $\angle 5$: c & d s-s ext \angle 's supp $\rightarrow ||$ lines

Name: _____

Date: _____ Period: _____

Given: A(-4, -8), B(-2, 4), C(3,10), and D(1, -2)

1. Using the definition of a parallelogram, determine whether the figure is one. **(Need opp sides parallel \rightarrow same slope)**

$$\left. \begin{aligned} m_{AB} &= \frac{4-(-8)}{-2-(-4)} = \frac{12}{2} = 6 \\ m_{CD} &= \frac{-2-10}{1-3} = \frac{-12}{-2} = 6 \end{aligned} \right\} ||$$

$$\left. \begin{aligned} m_{BC} &= \frac{10-4}{3-(-2)} = \frac{6}{5} \\ m_{DA} &= \frac{-2+8}{1+4} = \frac{6}{5} \end{aligned} \right\} ||$$

2. Find AD. (length)

$$d = \sqrt{(-2 + 8)^2 + (1 + 4)^2}$$

$$= \sqrt{(6)^2 + (5)^2} = 36 + 25 = \sqrt{61}$$

3. Find the equation of the line going through points A and B.

$$m_{AB} = 6 \quad y = 6x + b$$

$$-8 = 6(-4) + b \quad \boxed{y = 6x + 16}$$

$$16 = b$$

4. Find the equation of a line perpendicular to \overline{AB} , passing through (6,-5).

$$m_{\text{perpendicular}} = -\frac{1}{6} \quad y = -\frac{1}{6}x + b \quad \boxed{y = -\frac{1}{6}x - 4}$$

$$-5 = -\frac{1}{6}(6) + b$$

$$-4 = b$$

5. Find the equation of a line parallel to \overline{AB} , passing through (3, 7).

$$m_{AB} = 6 \quad y = 6x + b \quad \boxed{y = 6x - 11}$$

$$7 = 6(3) + b$$

$$-11 = b$$