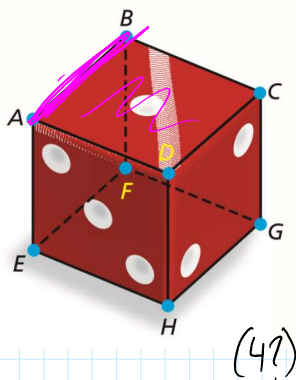


## Test Review

Assuming all intersections are perpendicular and that each segment is a portion of a line identify the following:

1. A pair of lines skew to line AB  
 $\overrightarrow{FG}$   $\overrightarrow{DH}$
2. A pair of lines perpendicular to AB  
 $\overrightarrow{AE}$   $\overrightarrow{BC}$
3. A pair of lines parallel to AB  
 $\overrightarrow{HC}$   $\overrightarrow{EF}$
4. A plane that intersects Plane ABC and it's intersection  
 $CDH$



Using the diagram, identify all the following angle pairs:

Corresponding

$$\angle 1, \angle 5 / \angle 3, \angle 7 / \angle 2, \angle 6 / \angle 4, \angle 8$$

Alternate Interior

$$\angle 3, \angle 6 / \angle 4, \angle 5$$

Alternate Exterior

$$\angle 2, \angle 7 / \angle 1, \angle 8$$

Consecutive interior

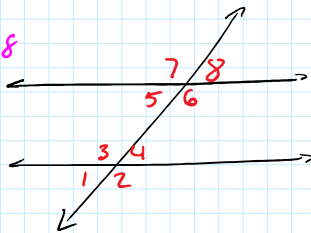
$$\angle 3, \angle 5 / \angle 4, \angle 6$$

Vertical

$$\angle 1, \angle 4 / \angle 2, \angle 3 / \angle 5, \angle 8 / \angle 6, \angle 7$$

Angles that form linear pairs with angle 4

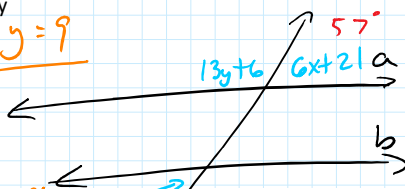
$$\angle 3, \angle 2$$



If line a is parallel to line b, find x and y

$$\begin{aligned} 6x + 21 &= 9x + 3 \\ -6x & \quad -6x \\ 21 - 3 &= 3x + 3 \end{aligned}$$

$$\underline{x=6} \quad \underline{y=9}$$



$$6x + 21 = 1x + 21$$

$$-6x \quad -6x$$

$$21 - 3x + 5$$

$$-3 \quad \rightarrow$$

$$18 = 3x$$

$$\frac{18}{3} = \frac{3x}{3}$$

$$6 = x$$

$$57 + 13y + 6 = 180$$

$$65 + 13y = 180$$

$$-65 \quad -65$$

$$\frac{13y}{13} = \frac{115}{13}$$

$$y = 9$$
  

$$6x + 21; x = 6$$

$$6 \cdot 6 + 21$$

$$36 + 21$$

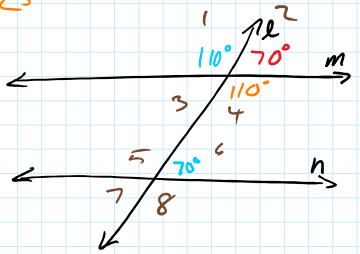
$$57$$

(3?)

Is line m parallel to line n (yes or no)? If yes, what theorem did you use?

yes, vert.  $\angle$ s, consecutive int.  $\angle$ s

yes, L.P., corresponding  $\angle$ s



(2?)

$$m = -1 \perp n = -1$$

Find the shortest distance from point A (2,6) and the line  $y = -x + 4$

$$y - y_1 = m(x - x_1)$$

$$y - 6 = 1(x - 2)$$

$$y - 6 = x - 2$$

$$+6 \quad +6$$

$$y = x + 4$$

$$y = x + 4$$

$$y = -x + 4$$

$$-x + 4 = -x + 4$$

$$+x \quad +x$$

$$4 = 2x + 4$$

$$-4 \quad -4$$

$$\frac{0 = 2x}{2} = \frac{0}{2}$$

$$0 = x$$

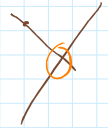
$$y = -x + 4$$

$$y = x + 4; x = 0$$

$$y = 0 + 4$$

$$y = 4$$

$$(0, 4)$$



$$(0, 4) (2, 6)$$

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\sqrt{(6 - 2)^2 + (4 - 6)^2}$$

$$\sqrt{(-2)^2 + (-2)^2}$$

$$\sqrt{4 + 4}$$

$$\sqrt{8}$$

$$2\sqrt{2}$$

Find the shortest distance from point A (-9,-3) and the line  $y = x - 6$

(1?)

Write an equation of a line passing through (4,6) and is parallel to  $y = 3x + 4$

$$y - 6 = 3(x - 4)$$

$$m = 3$$

$$y+6=3x-12$$

$$+6 \quad +6$$

$$y=3x-6$$

(2?)

$$m = \frac{1}{3} \perp m = -3$$

Write an equation of a line perpendicular to  $2x-6y=12$  and passes through  $(-1,3)$ .

$$y-3 = -3(x+1)$$

$$y-3 = -3x-3$$

$$+3 \quad +3$$

$$y = -3x$$

$$2x-6y=12$$

$$-2x \quad -2x$$

$$-6y = -2x+12$$

$$\frac{-6y}{-6} = \frac{-2x+12}{-6}$$

$$y = \frac{-2x}{-6} + \frac{12}{-6}$$

$$y = \frac{2x}{6} + -2$$

$$y = \frac{1}{3}x - 2$$

(2?)

Determine if the two lines are parallel, perpendicular, or neither. You must show your work!!!

$m = \frac{2}{5}$  ~~Parallel~~  $m = \frac{2}{5}$

$$2x-5y=12 \quad \text{and} \quad -10y+4x=24$$

$$-2y \quad -2x \quad -4y \quad -4x$$

$$\frac{-5y = -2x+12}{-5} \quad \frac{-10y = -4x+24}{-10}$$

$$y = \frac{-2x}{-5} + \frac{12}{-5} \quad y = \frac{-4y}{-10} + \frac{24}{-10}$$

$$\frac{2x}{5} \quad \frac{4y}{10}$$

$$\frac{2}{5}x \quad \frac{2}{5}x$$

$\frac{y_2-y_1}{x_2-x_1}$  ~~Perpendicular~~

Line 1 contains the points: (1,2) and (3,4)  
Line 2 contains the points: (-1,2) and (-3,4)

$$\text{Line 1: } \frac{2-4}{1-3} = \frac{-2}{-2} = 1$$

$$\text{Line 2: } \frac{2-4}{-1-3} = \frac{-2}{-4} = \frac{1}{2}$$

20 Q's

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