

Chapter 3 Questions

21) Classify the angle pairs below as corresponding, alternate interior, alternate exterior or consecutive interior angles based on the diagram to the right.

a) $\angle 6$ and $\angle 2$

Corresponding

c) $\angle 5$ and $\angle 3$

Consecutive Interior

e) $\angle 1$ and $\angle 5$

Corresponding

b) $\angle 7$ and $\angle 2$

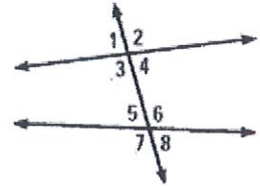
Alternate Exterior

d) $\angle 4$ and $\angle 5$

Alternate Interior

f) $\angle 3$ and $\angle 6$

Alternate Interior



Find the value of x and y .

22)

$$9x = 81$$

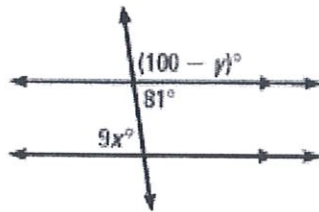
$$x = 9$$

$$100 - y + 81 = 180$$

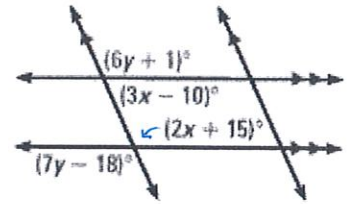
$$181 - y = 180$$

$$-y = -1$$

$$y = 1$$



23)



$$3x - 10 + 2x + 15 = 180$$

$$5x + 5 = 180$$

$$5x = 175$$

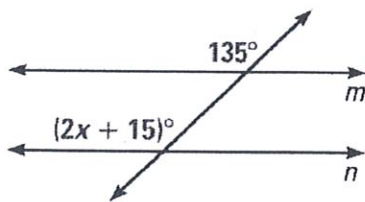
$$x = 35$$

$$6y + 1 = 7y - 18$$

$$19 = y$$

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

24)

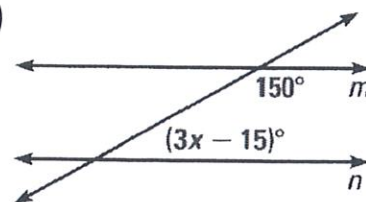


$$2x + 15 = 135$$

$$2x = 120$$

$$x = 60$$

25)



$$3x - 15 + 150 = 180$$

$$3x + 135 = 180$$

$$3x = 45$$

$$x = 15$$

26) Find the slope between the given points.

a) (3,5), (5,6)

$$m = \frac{5-6}{3-5} = \frac{-1}{-2} = \frac{1}{2}$$

b) (-5,-1) (3,-1)

$$m = \frac{-1+1}{-5-3} = \frac{0}{-8} = 0$$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

Determine whether the lines are perpendicular, parallel or neither.

27) $y = 5x - 3$

$$x + 5y = 2 \rightarrow 5y = -x + 2$$
$$y = -\frac{1}{5}x + \frac{2}{5}$$

Perpendicular -
opp. reciprocal
slope

28) $y = \frac{3}{5}x + 1$

$$5y = 3x - 2 \rightarrow y = \frac{3}{5}x - \frac{2}{5}$$

Parallel - Equal Slopes

29) Write equations of the lines that pass through point P and are (a) parallel and (b) perpendicular to the line with the given equation.

P (3, -1), $y = 6x - 4$

a) $m = 6$

$$m_{||} = 6$$

$$y + 1 = 6(x - 3) \leftarrow \text{Point-Slope Form}$$

$$y + 1 = 6x - 18$$

$$y = 6x - 19$$

b) $m = 6$

$$m_{\perp} = -\frac{1}{6}$$

$$y + 1 = -\frac{1}{6}(x - 3)$$

$$y + 1 = -\frac{1}{6}x + \frac{3}{6}$$

$$y = -\frac{1}{6}x + \frac{1}{2} - 1$$

$$y = -\frac{1}{6}x - \frac{1}{2}$$