

Name:

Key

Date:

Hour:

Geometry  
Review for PC #2 - Unit 3

Write the equation of the line that passes through the given points.

1. (-2, 5) and (4, 8)

$$k_0 \left( \begin{array}{c|c} -2 & 5 \\ \hline 4 & 8 \end{array} \right) + 3 \quad 5 = \frac{1}{2}(-2) + b$$

$$m = \frac{3}{6} = \frac{1}{2} \quad \begin{array}{r} 5 = -1 + b \\ +1 \quad +1 \\ \hline 6 = b \end{array}$$

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

2. (3, -8) and (1, 0)

$$-2 \left( \begin{array}{c|c} 3 & -8 \\ \hline 1 & 0 \end{array} \right) + 8 \quad \begin{array}{l} -8 = -4(3) + b \\ -8 = -12 + b \\ +12 \quad +12 \\ \hline 4 = b \end{array}$$

$$m = \frac{8}{-2} = -4$$

$$\boxed{y = -4x + 4}$$

Write the equation of the line that satisfies the given information.

3. Passing thru (5, -2) and parallel to  $3x - y = 4$

$$m = 3 \quad \begin{array}{r} -3x \quad -3x \\ -y = -3x + 4 \\ y = 3x - 4 \end{array}$$

$$-2 = 3(5) + b$$

$$-2 = 15 + b$$

$$\begin{array}{r} -15 \quad -15 \\ \hline -17 = b \end{array}$$

$$\boxed{y = 3x - 17}$$

4. Passing thru (-6, 3) and parallel to  $y = -\frac{1}{2}x + 3$

$$m = -\frac{1}{2}$$

$$3 = -\frac{1}{2}(-6) + b \quad \boxed{y = -\frac{1}{2}x}$$

$$3 = 3 + b$$

$$0 = b$$

5. Passing thru (4, 7) and perpendicular to  $2x - 3y = 6$

$$\perp m = \frac{-3}{2} \quad \begin{array}{r} -2x \quad -2x \\ -3y = -2x + 6 \\ -3 \quad -3 \quad -3 \\ y = \frac{2}{3}x - 2 \end{array}$$

$$7 = -\frac{3}{2}(4) + b$$

$$7 = -6 + b$$

$$13 = b \quad \boxed{y = \frac{-3}{2}x + 13}$$

6. Passing thru (-3, 1) and perpendicular to  $y = -\frac{3}{4}x - 1$

$$\perp m = \frac{4}{3}$$

$$1 = \frac{4}{3}(-3) + b \quad \boxed{y = \frac{4}{3}x + 5}$$

$$1 = -4 + b$$

$$5 = b$$

7. Vertical line that passes through  $(-8, 2)$

VUX  $\boxed{x = -8}$

8. Horizontal line that passes through  $(5, 6)$

H0Y  $\boxed{y = 6}$

9. Vertical line that passes through  $(5, -1)$

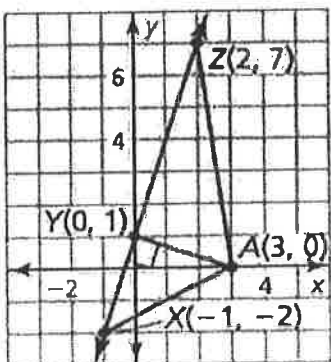
VUX  $\boxed{x = 5}$

10. Horizontal line that passes through  $(-2, -4)$

H0Y  $\boxed{y = -4}$

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

11.



$(3, 0)$   $(0, 1)$

$$D = \sqrt{(3-0)^2 + (0-1)^2}$$

$$= \sqrt{9+1}$$

$\boxed{D = \sqrt{10}}$  OR  $\boxed{Ay = \sqrt{10}}$

13. Solve for x and y in the diagram.

$$3(10x + 12y = 90)$$

$$-2(15x + 9y = 90)$$


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$$30x + 36y = 270$$

$$\pm -30x - 18y = -180$$


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$$18y = 90$$

$$\boxed{y = 5}$$

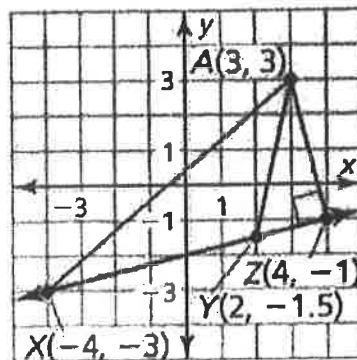
$$10x + 12(5) = 90$$

$$10x + 60 = 90$$

$$10x = 30$$

$$\boxed{x = 3}$$

12.

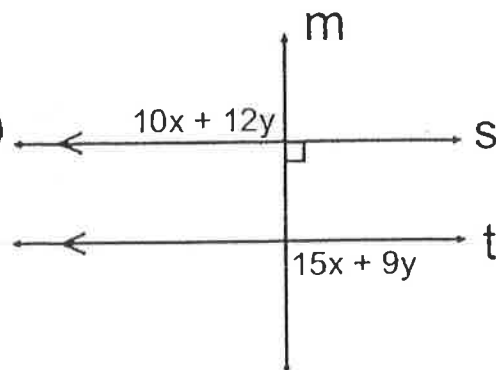


$(3, 3)$   $(4, -1)$

$$Az = \sqrt{(3-4)^2 + (3-(-1))^2}$$

$$= \sqrt{1+16}$$

$\boxed{Az = \sqrt{17}}$



Find the coordinates of point P along the directed line segment AB so that AP to PB is the given ratio.

20. A(8, 0) and B(3, -2) with ratio 1 to 4

$$\begin{aligned} X &= X_1 + t(X_2 - X_1) \\ &= 8 + \frac{1}{5}(3 - 8) \\ &= 8 - 1 \\ &= 7 \end{aligned}$$

$$\begin{aligned} y &= y_1 + t(y_2 - y_1) \\ &= 0 + \frac{1}{5}(-2 - 0) \\ &= 0 - \frac{2}{5} \\ &= -\frac{2}{5} \end{aligned}$$

$$\boxed{P(7, -\frac{2}{5})}$$

21. A(-2, -4) and B(6, 1) with ratio 3 to 2

$$\begin{aligned} X &= -2 + \frac{3}{5}(6 - (-2)) \\ &= -2 + 4.8 \\ &= 2.8 \end{aligned}$$

$$\begin{aligned} y &= -4 + \frac{3}{5}(1 - (-4)) \\ &= -4 + 3 \\ &= -1 \end{aligned}$$

$$\boxed{P(2.8, -1)}$$

22. A(1, 6) and B(-2, -3) with ratio 5 to 1

$$\begin{aligned} x &= 1 + \frac{5}{6}(-2 - 1) \\ &= 1 - 2.5 \\ &= -1.5 \end{aligned}$$

$$\begin{aligned} y &= 6 + \frac{5}{6}(-3 - 6) \\ &= 6 - 7.5 \\ &= -1.5 \end{aligned}$$

$$\boxed{P(-1.5, -1.5)}$$

23. Determine if the given lines are parallel, perpendicular or neither.

Line A: (-9, 3), (-5, 7)

Line B: (-11, 6), (-7, 2)

$$\begin{array}{c} \underline{A} \\ m = \frac{4}{4} = 1 \end{array}$$

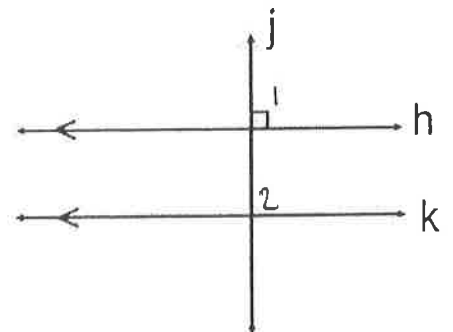
$$\begin{array}{c} \underline{B} \\ m = \frac{-4}{4} = -1 \end{array}$$

$\boxed{\text{perpendicular}}$

24. Given:  $h \parallel k$  and  $j \perp h$

Prove:  $j \perp k$

S	R
1. $h \parallel k$	1. given
2. $j \perp h$	2. given
3. $\angle 1$ is rt. $\angle$	3. Def $\perp$
4. $m\angle 1 = 90$	4. Def rt. $\angle$ 's
5. $\angle 1 \cong \angle 2$	5. Corr. $\angle$ 's Thm
6. $m\angle 1 = m\angle 2$	6. Def $\cong \angle$ 's
7. $m\angle 2 = 90$	7. Trans POE
8. $j \perp k$	8. Def $\perp$ lines



-OR-

S	R
1. $h \parallel k$	1. given
2. $j \perp h$	2. given
3. $j \perp k$	3. $\perp$ Trans Thm

