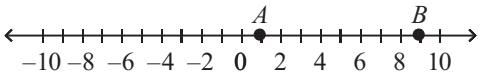
NAME_____

Module 10 Coordinate Geometry and Spatial Visualization
Lesson 3 Coordinate Geometry

Independent Practice 10.3

Find the distance from point *A* to point *B*. Then, find the coordinate of the midpoint of $\overline{AB}$.

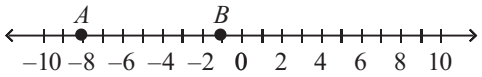
1.



Distance: 8 units

Midpoint: 5

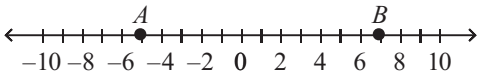
2.



Distance: 7 units

Midpoint: $-4\frac{1}{2}$

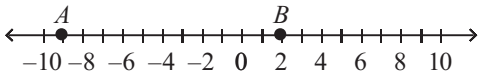
3.



Distance: 12 units

Midpoint: 1

4.

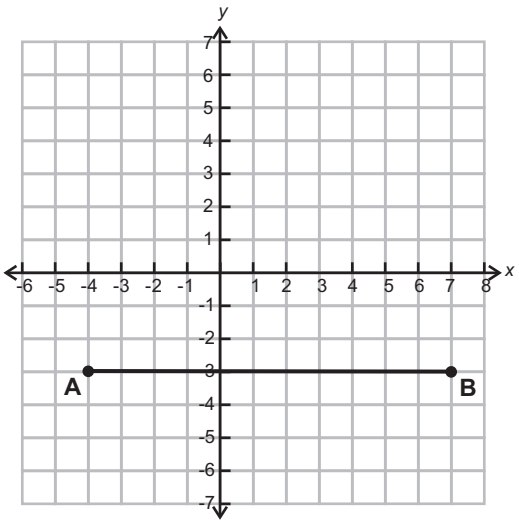


Distance: 11 units

Midpoint: $-3\frac{1}{2}$

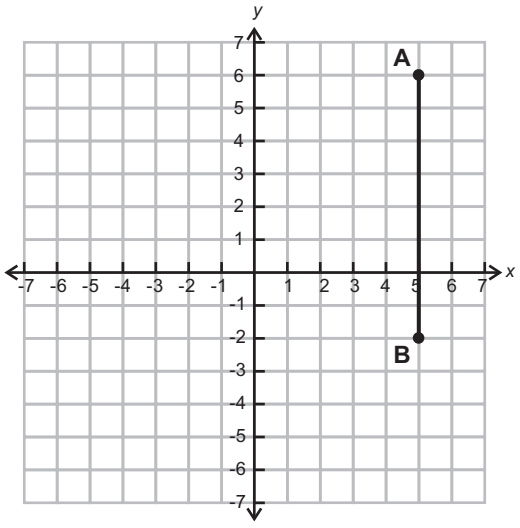
Find the distance from point *A* to point *B*.

5.



11 units

6.



8 units

7. Find the distance from (-3, 7) to (9, 2).

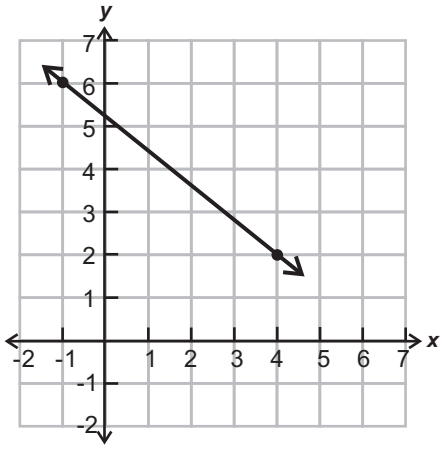
13 units

8. Find the distance from (-2, -4) to (6, -1).

$\sqrt{73}$ units

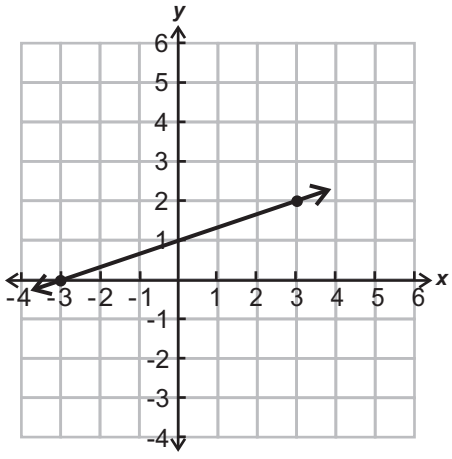
Find the slope.

9.



Slope = $-\frac{4}{5}$

10.



Slope = $\frac{1}{3}$

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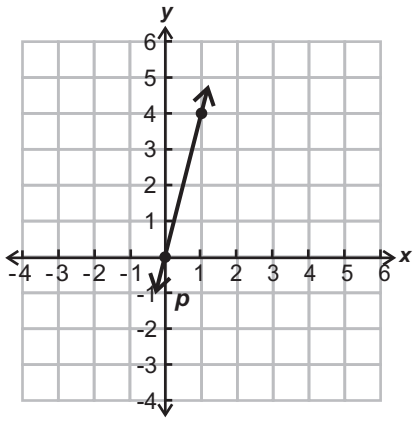
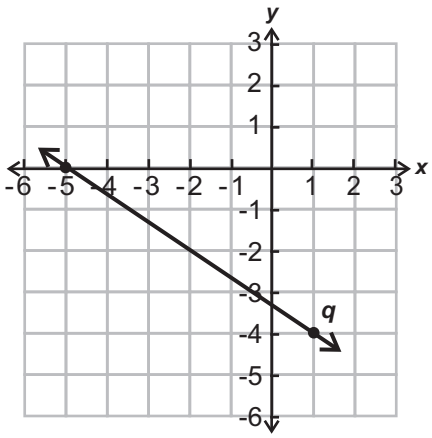
11. Find the slope of any line parallel to line p.

Slope = 4



12. Find the slope of any line perpendicular to line q.

Slope = $\frac{3}{2}$



Journal

1. What does it mean for a point to be the midpoint of a segment? Explain how to find the coordinate of the midpoint of a segment on a number line when you know the coordinates of the endpoints of the segment.

2. Describe what you can tell about the slope of a line just by looking at the line.

3. Which is steeper: a line with a slope of $\frac{1}{2}$ or a line with a slope of $\frac{1}{8}$? Explain.

4. Which is steeper: a line with a slope of $\frac{1}{2}$ or a line with a slope of $-\frac{1}{2}$? Explain.

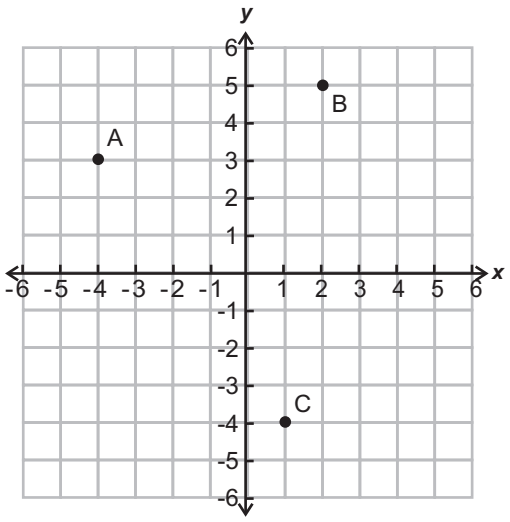
Cumulative Review

$\triangle APE \cong \triangle BUG$

1. Which angle corresponds to $\angle P$? $\angle U$

2. Which segment corresponds to $\overline{AE}$? $\overline{BG}$

Write the ordered pair representing each point.

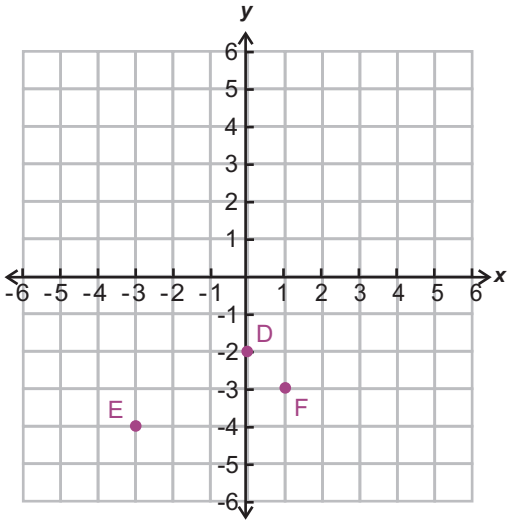


3. A **(-4, 3)**

4. B **(2, 5)**

5. C **(1, -4)**

Plot and label each point.



6. $D(0, -2)$

7. $E(-3, -4)$

8. $F(1, -3)$

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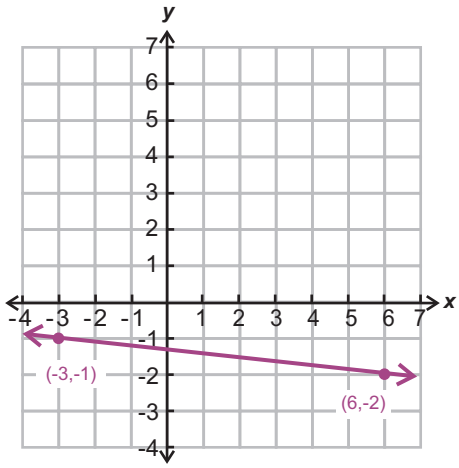
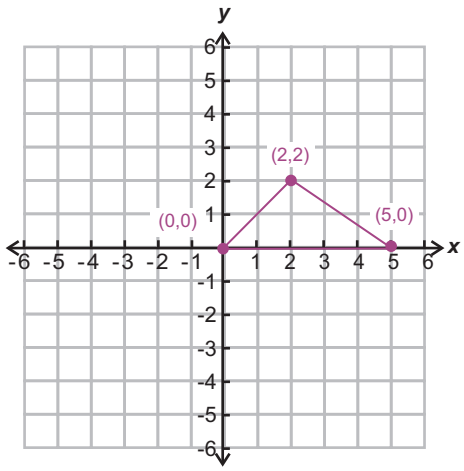
9. Graph the line that contains (-3, -1) and (6, -2).



10. Graph and classify the triangle with vertices at the origin, (2, 2), and (5, 0).



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Possible Journal Answers

1. **A midpoint of a segment is the point that divides the segment into two congruent segments. It is the "middle point." To find the coordinate of the midpoint of a segment on a number line, first find the sum of the coordinates of the endpoints. Then, divide the sum by two.**

2. **The sign of the slope of a line can be determined just by looking at the line. If the line rises from left to right, the slope is positive. If the line falls from left to right, the slope is negative. If the line is horizontal, the slope is zero. If the line is vertical, the slope is undefined.**

3. **A line with a slope of $\frac{1}{2}$ is steeper because for every one unit of rise the line runs across two units. A slope of $\frac{1}{8}$ means that for every one unit of rise the line runs across eight units. The line with a slope of $\frac{1}{2}$ rises more often than one with a slope of $\frac{1}{8}$, making it steeper.**

4. **A line with a slope of $\frac{1}{2}$ has the same steepness as a line with a slope of $-\frac{1}{2}$. Both have a rise of one and a run of two. The only difference in the two lines is their orientation. The positive slope rises from left to right, and the negative slope falls from left to right.**