

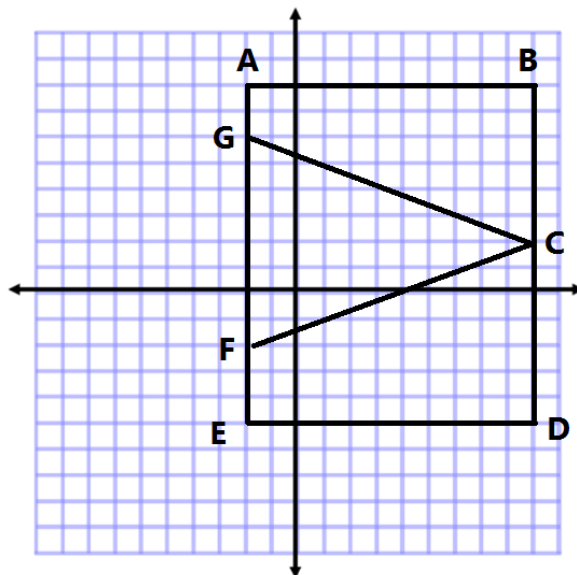
Lesson 7: Distance on the Coordinate Plane

Classwork

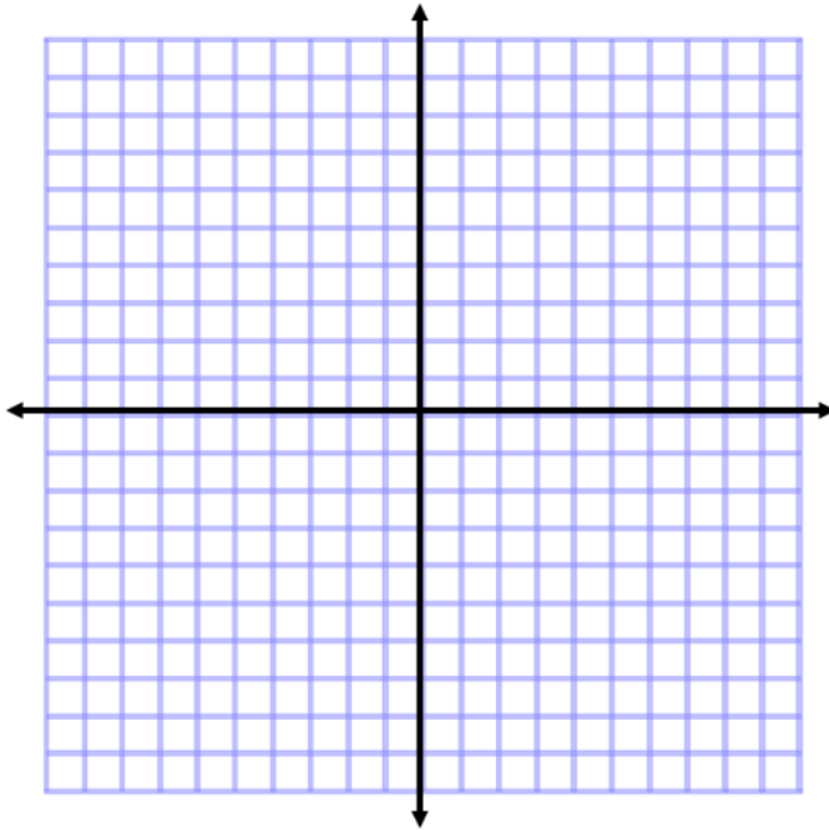
Example 1

Determine the lengths of the given line segments by determining the distance between the two endpoints.

Line Segment	Point	Point	Distance	Proof
\overline{AB}				
\overline{BC}				
\overline{CD}				
\overline{BD}				
\overline{DE}				
\overline{EF}				
\overline{FG}				
\overline{EG}				
\overline{GA}				
\overline{FA}				
\overline{EA}				



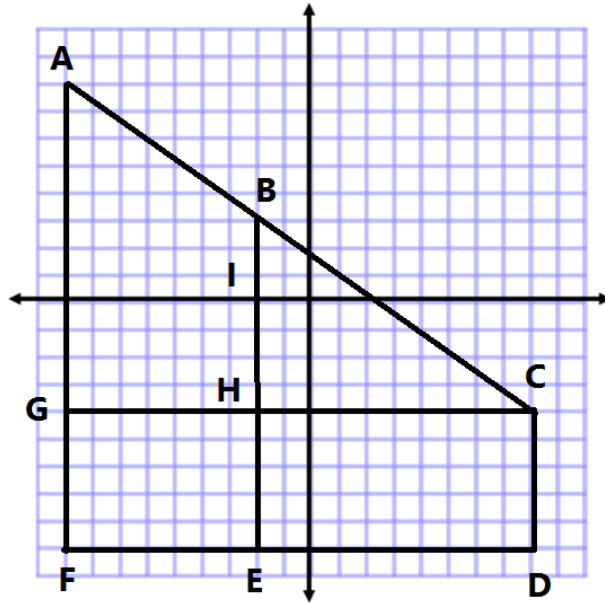
Example 2



Plot and connect the points $A(3, 2)$, $B(3, 7)$, and $C(8, 2)$. Name the shape, and determine the area of the polygon.

Exercise

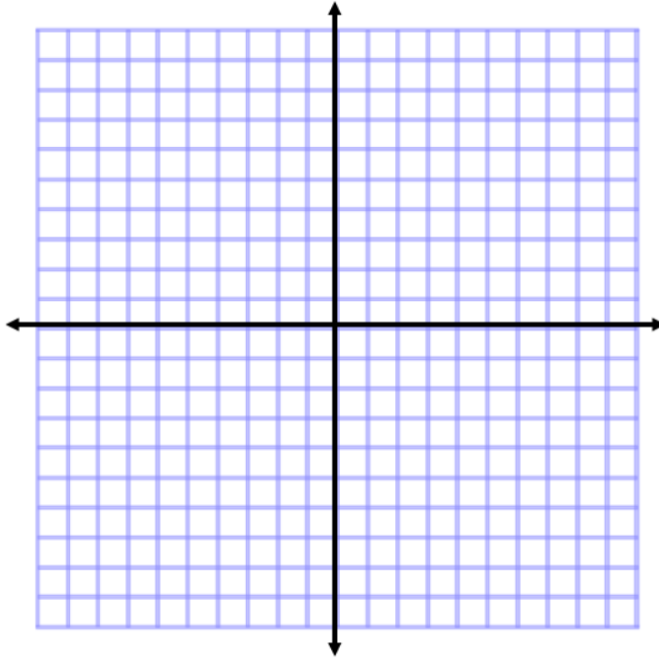
Complete the table using the diagram on the coordinate plane.



Line Segment	Point	Point	Distance	Proof
\overline{BI}				
\overline{BH}				
\overline{BE}				
\overline{GH}				
\overline{HC}				
\overline{GC}				
\overline{CD}				
\overline{FG}				
\overline{GA}				
\overline{AF}				

Exercises

For Exercises 1 and 2, plot the points, name the shape, and determine the area of the shape. Then write an expression that could be used to determine the area of the figure. Explain how each part of the expression corresponds to the situation.



1. $A(4, 6)$, $B(8, 6)$, $C(10, 2)$, $D(8, -3)$, $E(5, -3)$, and $F(2, 2)$
2. $X(-9, 6)$, $Y(-2, -1)$, and $Z(-8, -7)$

Problem Set

1. Given the pairs of points, determine whether the segment that joins them will be horizontal, vertical, or neither.

- a. $X(3, 5)$ and $Y(-2, 5)$ _____
- b. $M(-4, 9)$ and $N(4, -9)$ _____
- c. $E(-7, 1)$ and $F(-7, 4)$ _____

2. Complete the table using absolute value to determine the lengths of the line segments.

Line Segment	Point	Point	Distance	Proof
\overline{AB}	$(-3, 5)$	$(7, 5)$		
\overline{CD}	$(1, -3)$	$(-6, -3)$		
\overline{EF}	$(2, -9)$	$(2, -3)$		
\overline{GH}	$(6, 1)$	$(6, 16)$		
\overline{JK}	$(-3, 0)$	$(-3, 12)$		

Plot the points for each shape, determine the area of the polygon, and then write an expression that could be used to determine the area of the figure. Explain how each part of the expression corresponds to the situation.

3. $A(1, 3)$, $B(2, 8)$, $C(8, 8)$, $D(10, 3)$, and $E(5, -2)$

