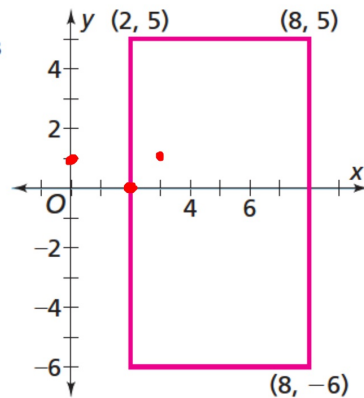


Launch:

- The coordinates of three vertices of a rectangle are given. Find the coordinates of the points described below.
 - the fourth vertex $(2, -6)$
 - four points that are inside the rectangle $(3, 1)$
 - four points that are outside the rectangle $(0, 1)$
 - four more points that lie on the rectangle $(2, 0)$
 - How can you tell whether a point is inside the rectangle just by looking at its coordinates?



$(6, 3)$

7.5 Getting Started

Objective: To warm up to the ideas of the investigation.

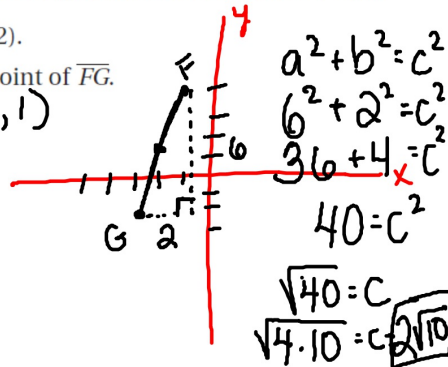
FOR YOU TO EXPLORE :

- Suppose $A(2, 5)$ and $B(2, 396)$.
 - What is the distance between A and B ? 391 units
 - Find the coordinates of the midpoint of \overline{AB} . $(2, 200.5)$
- How many vertical lines contain the point $(-1, 9)$? 1
 - Name the coordinates of the intersection I of a horizontal line through $T(3, -5)$ and a vertical line through $R(-1, 9)$. $(-1, -5)$

* Plot the points T , R , and I . Find the lengths of all three sides of $\triangle TRI$.

- Suppose that $F(-1, 4)$ and $G(-3, -2)$.

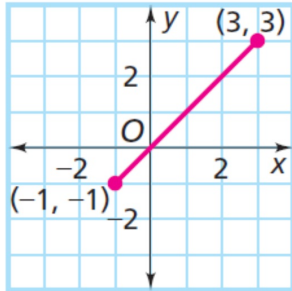
- Find the coordinates of the midpoint of \overline{FG} . $(-2, 1)$
- Find the length of \overline{FG} .



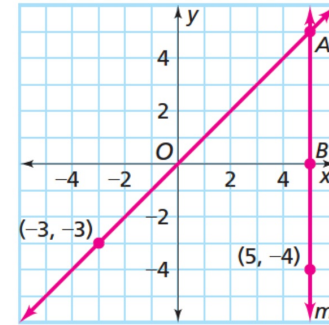
On Your Own

Page 564: 5, 7, 8

5. Find the coordinates of the midpoint of the segment at the right. Describe the method you used.



7. In the diagram, m is a vertical line. Find each of the following.



- the coordinates of A and B
 - the length of \overline{AB}
 - the coordinates of the midpoint of \overline{AB}
 - the area of $\triangle AOB$
 - the length of \overline{AO}
 - the coordinates of the midpoint of \overline{AO}
8. List coordinates of points to make a connect-the-dots puzzle that draws your initials. Give it to a friend to try.