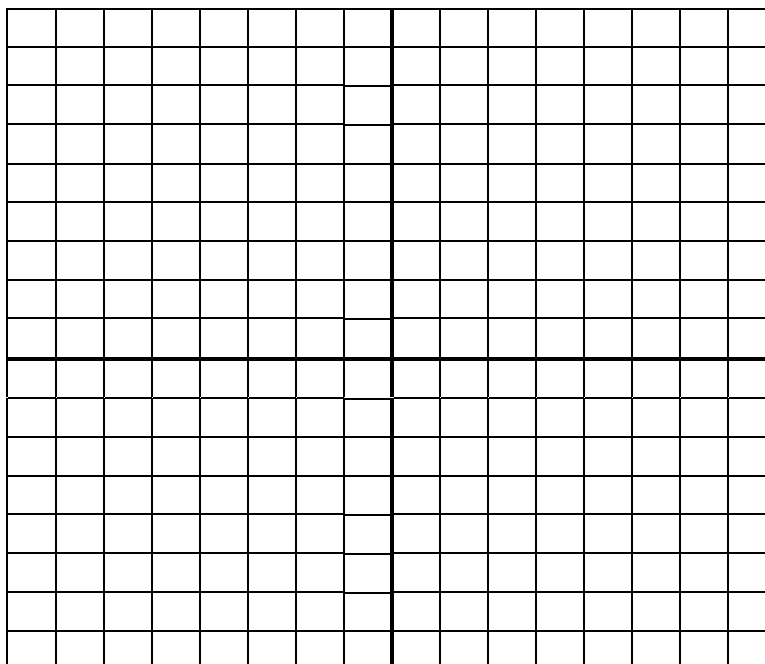


Rectangular Coordinate Systems — 2.1



1. a) Find the distance $d(A, B)$ between A and B .

b) Find the midpoint of the segment \overline{AB} .

$$A(-4, 7) \qquad B(0, -8)$$

Distance Formula

The distance $d(P_1, P_2)$ between any two points $P_1(x_1, y_1)$ and $P_2(x_2, y_2)$ in a coordinate plane is

$$d(P_1, P_2) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Midpoint Formula

The midpoint M of the line segment from $P_1(x_1, y_1)$ to $P_2(x_2, y_2)$ is $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$.

2. Show that the triangle with vertices A, B, and C is a right triangle, and find its area.

