Measuring a line segment
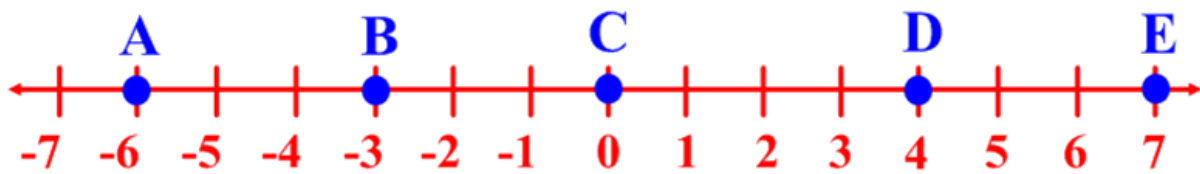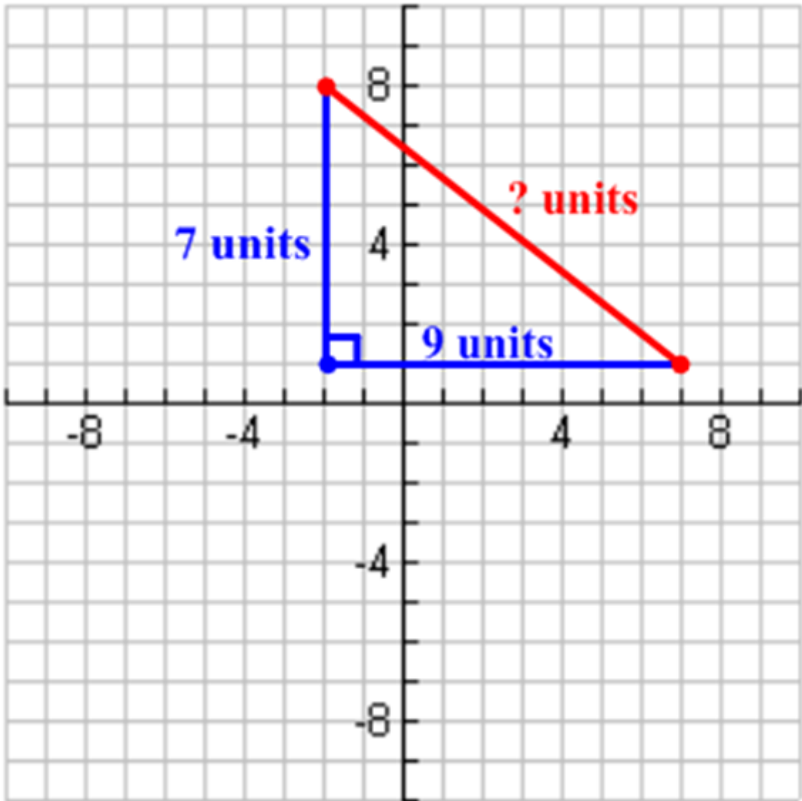
The measure of a line segment is the absolute value of the **DIFFERENCE** of the coordinates of the endpts.

The Pythagorean Theorem

In A right triangle, if a and b are the lengths of the legs and c is the length of the hypotenuse, then the following equation is always true:

$$a^2 + b^2 = c^2$$

The Distance Formula

On the coordinate plane, the distance between any 2 pts. with coordinates (x_1, y_1) and (x_2, y_2) can be found by the following formula:

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

Def. Midpt.

The midpt. of $\overline{AB}$ is the pt. X
between A and B such that AX = XB

A   X   B

Midpt. Formulas

1. On a number line, the coordinate of the midpt. of a segment whose endpts. have coordinates a and b can be found by:

$$\frac{a+b}{2}$$

2. On the coordinate plane, the coordinates of the midpt. of a segment whose endpts. are (x_1, y_1) and (x_2, y_2) are:

$$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

Def. Segment Bisector

Any segment, line, or plane that
intersects a segment at its midpt.

P   M   Q