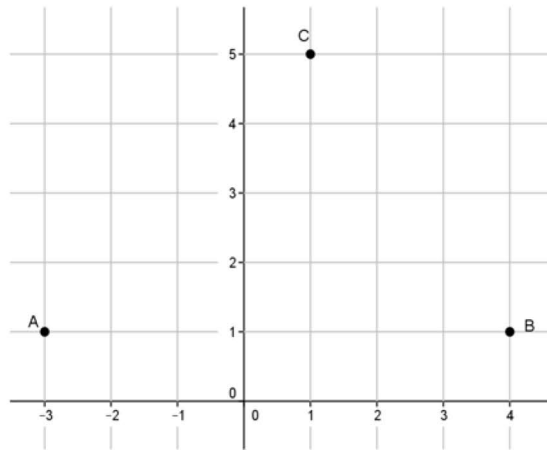


Name _____

Date _____

Distance on the Coordinate Plane

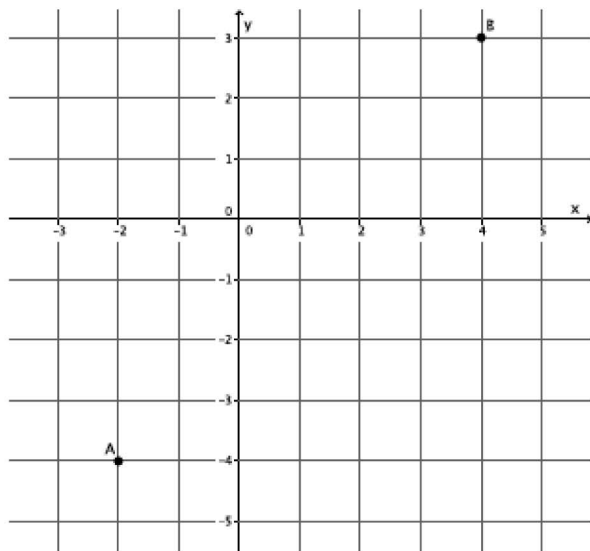
Use the following diagram to answer the questions below.



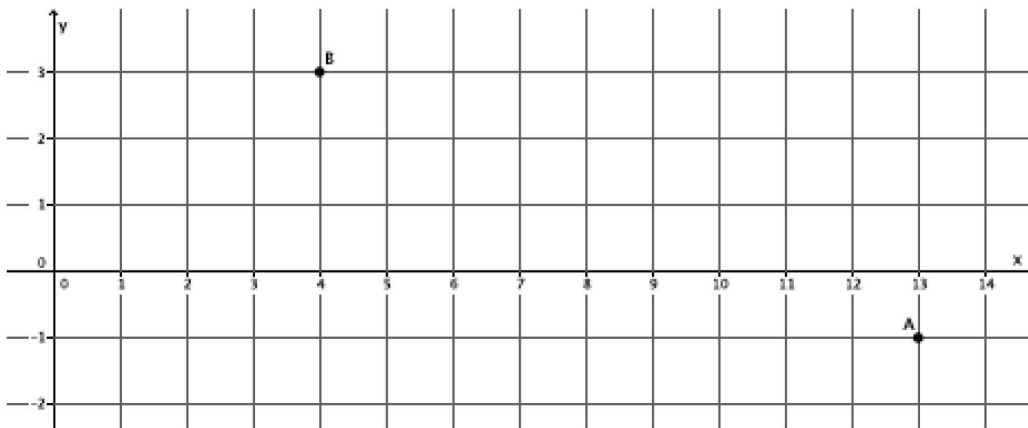
1. Determine $|AC|$. Leave your answer in square root form unless it is a perfect square.
2. Determine $|CB|$. Leave your answer in square root form unless it is a perfect square.
3. Is the triangle formed by the points A , B , C a right triangle? Explain why or why not.

For each of the Problems 1–4 determine the distance between points A and B on the coordinate plane. Round your answer to the tenths place.

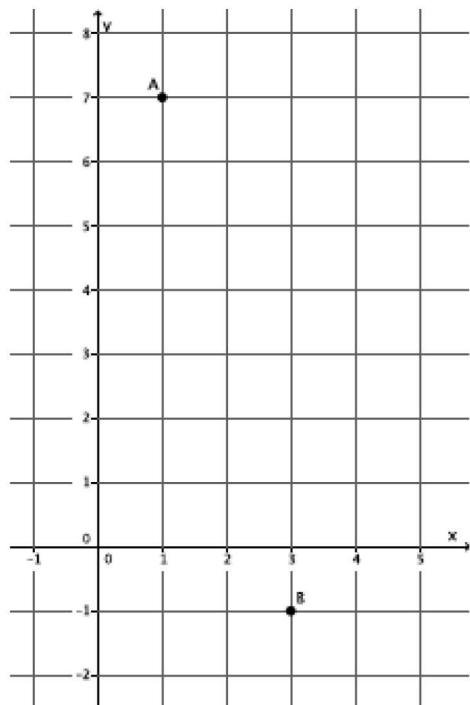
1.



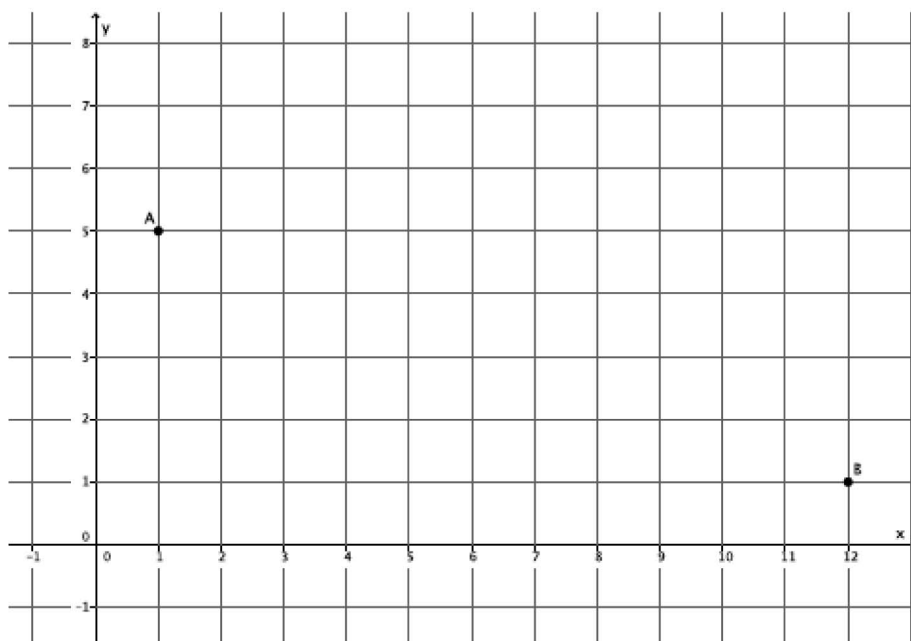
2.



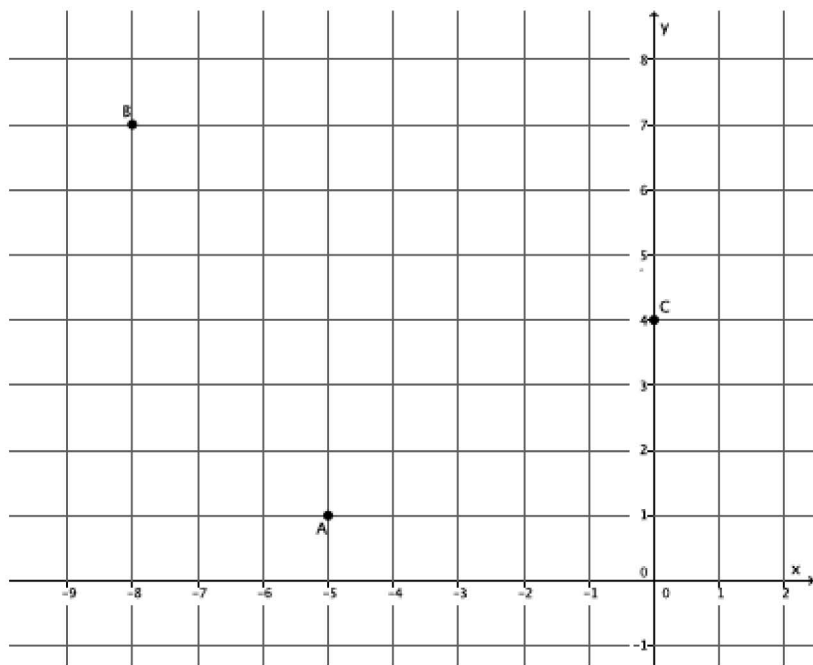
3.



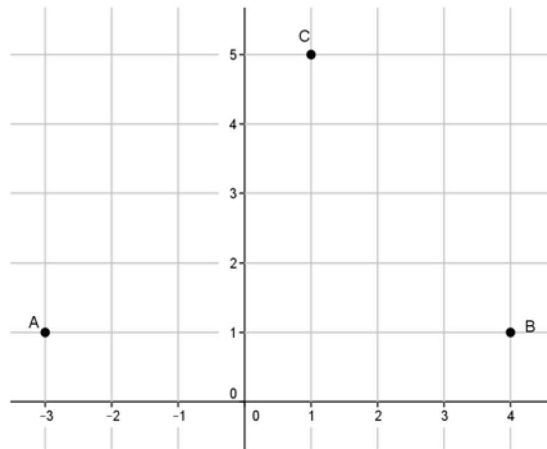
4.



5. Is the triangle formed by points A , B , C a right triangle?



Use the following diagram to answer the questions below.



1. Determine $|AC|$. Leave your answer in square root form unless it is a perfect square.

Let c represent $|AC|$.

$$\begin{aligned} 4^2 + 4^2 &= c^2 \\ 16 + 16 &= c^2 \\ 32 &= c^2 \\ \sqrt{32} &= c \end{aligned}$$

2. Determine $|CB|$. Leave your answer in square root form unless it is a perfect square.

Let d represent $|CB|$.

$$\begin{aligned} 3^2 + 4^2 &= d^2 \\ 9 + 16 &= d^2 \\ 25 &= d^2 \\ \sqrt{25} &= d \\ 5 &= d \end{aligned}$$

3. Is the triangle formed by the points A , B , C a right triangle? Explain why or why not.

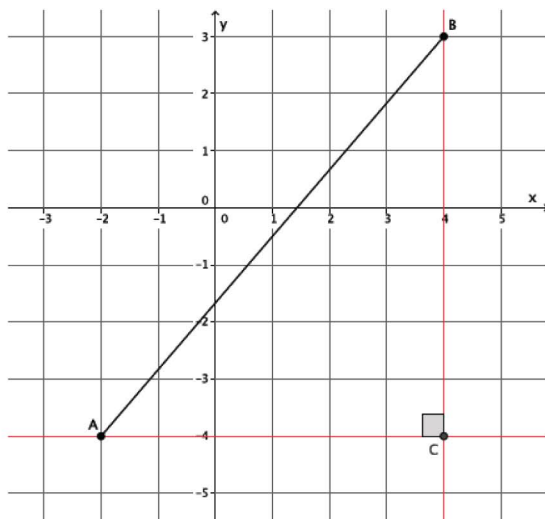
Using the lengths 5 , $\sqrt{32}$, and $|AB| = 7$ to determine if the triangle is a right triangle, I have to check to see if

$$\begin{aligned} 5^2 + (\sqrt{32})^2 &= 7^2 \\ 25 + 32 &\neq 49 \end{aligned}$$

Therefore, the triangle formed by the points A , B , and C is not a right triangle because the lengths of the triangle do not satisfy the Pythagorean Theorem.

For each of the Problems 1–4 determine the distance between points A and B on the coordinate plane. Round your answer to the tenths place.

1.



Let c represent $|AB|$.

The distance between points A and B is about 9.2 units.

2.

Let c represent $|AB|$.

$$9^2 + 4^2 = c^2$$

$$81 + 16 = c^2$$

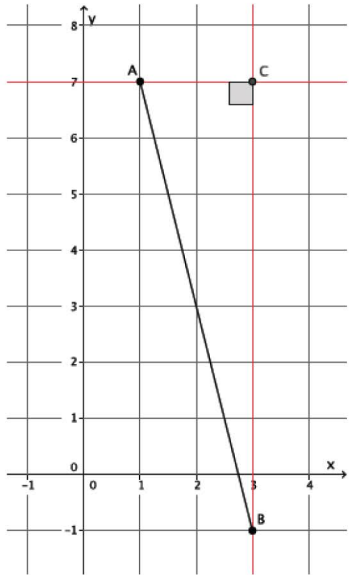
$$97 = c^2$$

$$\sqrt{97} = c$$

$$9.8 \approx c$$

The distance between points A and B is about 9.8 units.

3.



Let c represent $|AB|$.

The distance between points A and B is about 8.2 units.

4.

Let c represent $|AB|$.

$$11^2 + 4^2 = c^2$$

$$121 + 16 = c^2$$

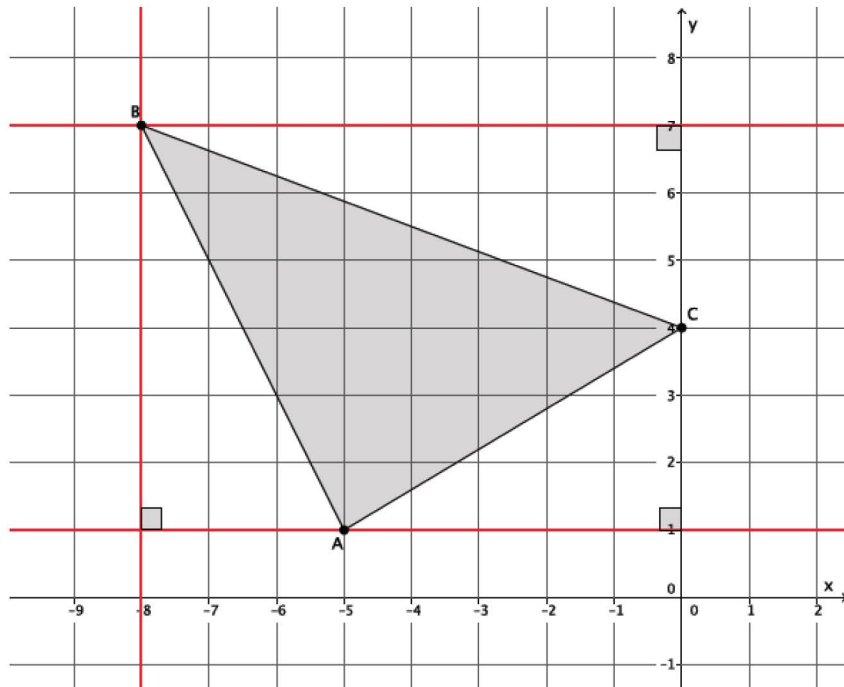
$$137 = c^2$$

$$\sqrt{137} = c$$

$$11.7 \approx c$$

The distance between points A and B is about 11.7 units.

5. Is the triangle formed by points A , B , C a right triangle?



Let c represent $|AB|$.

$$\begin{aligned} 3^2 + 6^2 &= c^2 \\ 9 + 36 &= c^2 \\ 45 &= c^2 \\ \sqrt{45} &= c \end{aligned}$$

Let c represent $|AC|$.

$$\begin{aligned} 3^2 + 5^2 &= c^2 \\ 9 + 25 &= c^2 \\ 34 &= c^2 \\ \sqrt{34} &= c \end{aligned}$$

Let c represent $|BC|$.

$$\begin{aligned} 3^2 + 8^2 &= c^2 \\ 9 + 64 &= c^2 \\ 73 &= c^2 \\ \sqrt{73} &= c \end{aligned}$$

$$\begin{aligned} (\sqrt{45})^2 + (\sqrt{34})^2 &= (\sqrt{73})^2 \\ 45 + 34 &= 73 \\ 79 &\neq 73 \end{aligned}$$

No, the points do not form a right triangle.