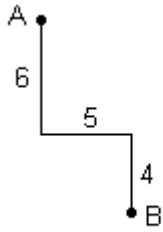
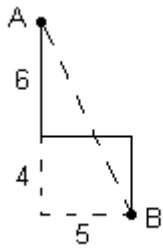


8. Starting from point A, a boat sails due south for 6 miles, then due east for 5 miles and then due south for 4 miles.

(a) Draw a picture to represent this situation.



(b) How far is the boat from point A at the end of this journey?



$$10^2 + 5^2 = d^2$$

$$100 + 25 = d^2$$

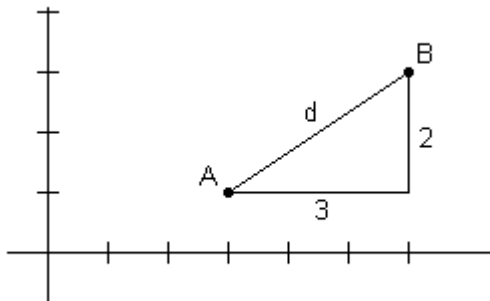
$$125 = d^2$$

$$\sqrt{125} = d$$

$$11.2 \approx d$$

The boat is about 11.2 miles from the starting point.

10. Use the Pythagorean theorem to find the distance between points A and B. **DO NOT** simply apply the distance formula. Be sure to give a careful explanation.



We can make a right triangle with the distance between the two points being represented by the hypotenuse (see picture). Now because we know the coordinates of these points we know the lengths of each of the legs. Therefore we get

$$2^2 + 3^2 = d^2$$

$$4 + 9 = d^2$$

$$13 = d^2$$

$$\sqrt{13} = d$$