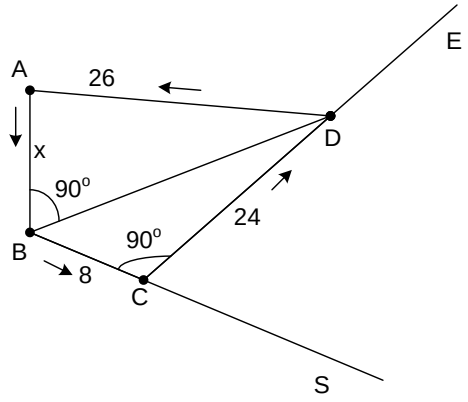
Answer on Question#40051 - Math – Geometry

For the final exam in a scuba diving certification course, Karl navigates from one point in a lake to another. Karl begins the test x meters directly beneath the boat and swims due south for 8 meters. He then turns due east and swims 24 meters, at which point he swims directly from his location, in a straight line, back to the boat. If the distance that Karl swims back to the boat is 26 meters, what is the value of x?

Solution:



Using Pythagoras' theorem:

ΔBCD:

$$BD^2 = BC^2 + CD^2$$

$$BD^2 = 8^2 + 24^2 = 640$$

ΔABD:

$$x^2 = AD^2 - BD^2$$

$$x^2 = 26^2 - 640 = 36$$

So $x = 6$

Answer: value of x is 6 m