

Answer on Question #62614 – Math – Algebra

Question

The approximate speed at which a tsunami can travel is given by the formula

$$S = \sqrt{9.8 \cdot D},$$

where S is the speed of the tsunami in metres per second, and D is the depth of the water in metres.

A tsunami is travelling at 36m/s.

What is the mean depth of water to the nearest metre?

Solution

$$S = \sqrt{9.8 \cdot D},$$

$$S = 36 \text{ m/s.}$$

Therefore,

$$\sqrt{9.8 \cdot D} = 36;$$

$$9.8 \cdot D = 36^2$$

$$9.8D = 1296$$

$$D = \frac{1296}{9.8}$$

$$D = 132.25$$

Thus, the mean depth of water is about 132 m.

Answer: 132 m.