

### Answer on Question #49371-Physics-Electrodynamics

While fishing, you notice the eight crests pass a given point in a time of interval of 10 seconds. You approximately calculated the distance between two crests to be 1.2 m. Calculate the a) speed of water and b) depth of water.

#### Solution

a) The wave equation is

$$v = f\lambda.$$

We know that the frequency is

$$f = \frac{8}{10\text{s}} = 0.8 \text{ Hz}.$$

The wavelength is the distance between two crests:

$$\lambda = 1.2 \text{ m}.$$

The speed of water is

$$v = 0.8 \text{ Hz} \cdot 1.2 \text{ m} = 0.96 \frac{\text{m}}{\text{s}}.$$

b) Unfortunately, there is not enough information to find the depth of water.