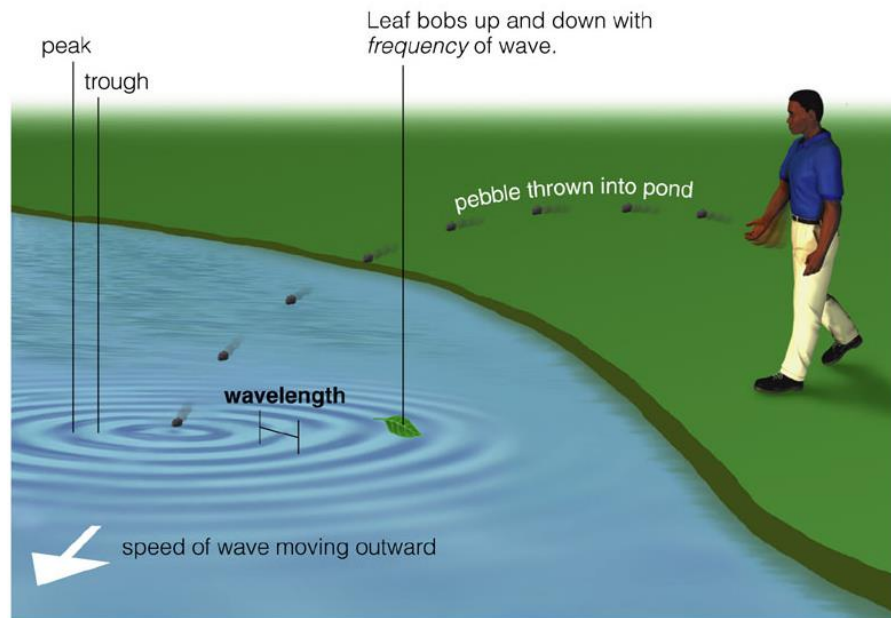


Answer on Question #45340, Physics, Other

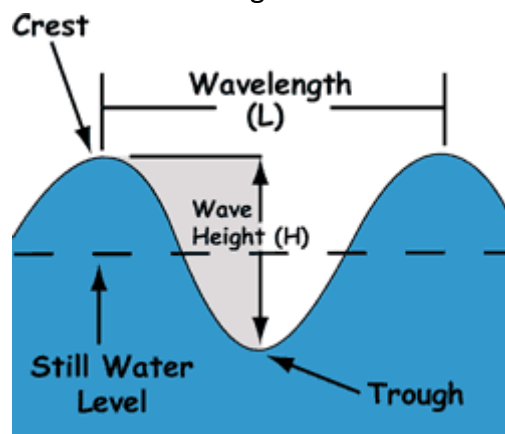
A stone is thrown into a water pond forming 10 waves in 5 seconds. The diameter of the first crest is 13 meter and the diameter of the last crest is 4 meter. Find the wavelength.

Solution:



Wavelength is the horizontal distance, either between the crests or troughs of two consecutive waves.

In our case, between 10 crests we have 9 troughs.



The radius of first crest is

$$R_1 = \frac{13}{2} = 6.5 \text{ m}$$

The radius of tenth crest is

$$R_{10} = \frac{4}{2} = 2 \text{ m}$$

The wavelength is

$$L = \frac{R_1 - R_{10}}{9} = \frac{6.5 - 2}{9} = 0.5 \text{ m}$$

Answer: $L = 0.5 \text{ m}.$