Question.

A 5.0-Hz continuous wave travels on a slinky. If the wavelength is 0.7 m, what is the speed of the waves on the slinky?

Given:

$f = 5\ Hz$

$\lambda = 0.7\ m$

Find:

$v = ?$

Solution.

By definition the wavelength λ of the wave travelling at constant speed v with frequency f is given by:

$$\lambda = \frac{v}{f}$$

So,

$$v = \lambda f$$

Calculate:

$$v = 5 \cdot 0.7 = 3.5\ \frac{m}{s}$$

Answer.

$v = \lambda f = 3.5\ \dfrac{m}{s}$