A person lying on an air mattress in the ocean rises and falls through one complete cycle every 5.00 seconds. The crests of the wave causing the motion are 20.7 m apart. Determine the frequency of the wave.

What is the speed of the waves?

By the definition, the speed of wave is:

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

where λ – wavelength, T – wave period.

Thus speed of the waves is:

$$v = \frac{20.7m}{5.00s} = 4.14\frac{m}{s}$$

Answer: $v = 4.14\frac{m}{s}$