

1. A 200 N force displaces a spring 13.5 cm from equilibrium. What is its spring constant?

1481.5

$$F = kx$$

$$k = 200 \text{ N} / (13.5 \text{ cm} * 1 \text{ m}/100 \text{ cm})$$

2. What is the period of a wave with a frequency of 7 Hz?

T (period) = $1 / f$, where f is frequency

$T = 1 / 7$ Hz, or 0.14 seconds

1. What is the wavelength of a sound wave moving at 443 m/s with a frequency of 1800 Hz?

0.25

$v = \lambda f$, where v is the velocity, λ is the wavelength, and f is the frequency

$\lambda = 443 \text{ m/s} / 1800 \text{ Hz}$, or 0.25 m