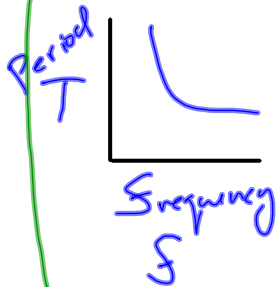


Wave Lab Results 2/25/16

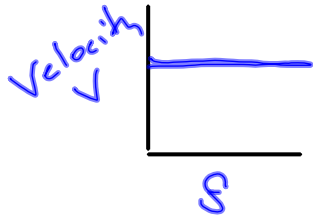
Period vs frequency



$$T = \frac{1}{f}$$

As Frequency increases, period decreases.

Velocity vs frequency



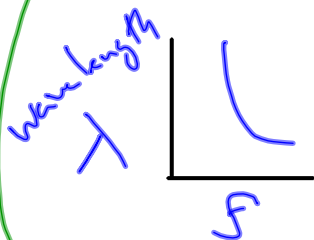
changing frequency does not change velocity.

only changing tension changes velocity.

because the wavelength changes

$$v = f \lambda$$

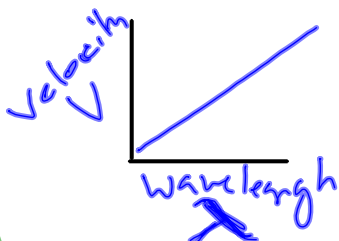
Wavelength vs frequency



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

velocity
frequency

Velocity Vs Wavelength



$$v = f \cdot \lambda$$

Example Problems:

$$\lambda = 2 \text{ cm} \quad f = 20 \frac{1}{\text{s}} \quad v = ?$$

$20 \frac{1}{\text{s}}$

$$v = f \cdot \lambda$$

$$v = \left(20 \frac{1}{\text{s}}\right) (2 \text{ cm})$$

$$v = 40 \frac{\text{cm}}{\text{s}}$$

$$\lambda = 80 \text{ cm} \quad v = 10 \frac{\text{cm}}{\text{s}} \quad f = ?$$

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

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

$$\frac{(10 \frac{\text{cm}}{\text{s}})}{(80 \text{ cm})} = \frac{1}{8} \frac{1}{\text{s}}$$

$$= \frac{1}{8} \text{ Hz}$$