

Chapter 8 - Waves Transferring Energy

period (T):  $T = \frac{\text{time}}{\text{cycles}}$        $T = \frac{1}{f}$       units: s

frequency (f):  $f = \frac{\text{cycles}}{\text{time}}$        $f = \frac{1}{T}$       units: Hz  
(s<sup>-1</sup> or /s)

Universal Wave Equation:

$$v = \lambda f$$

MP/340

24 times  
36 s

f = ?  
T = ?

$$f = \frac{24 \text{ times}}{36 \text{ s}}$$

$$f = 0.67 \text{ Hz}$$

$$T = \frac{36 \text{ s}}{24}$$

$$T = 1.5 \text{ s}$$

MP/348

$$f = 2.8 \text{ Hz}$$

$$\lambda = 0.36 \text{ m}$$

$$v = ?$$

$$v = \lambda f$$

$$v = (0.36 \text{ m})(2.8 \text{ s}^{-1})$$

$$v = 1.0 \text{ m/s}$$

MP/348

$$\lambda = 2.8 \text{ m}$$

$$v = 3.80 \text{ m/s}$$

$$f = ?$$

$$v = \lambda f$$

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

$$f = \frac{3.80 \text{ m/s}}{2.8 \text{ m}}$$

$$f = 1.4 \text{ s}^{-1} \text{ or } 1.4 \text{ Hz}$$