Wave Problems:

1. If the period of a pendulum is 0.8 seconds, what is its frequency?

$$f = \frac{1}{T} = \frac{1}{0.8} = 1.25\ Hz$$

2. If you are standing on a dock and you notice that a wave passes you every 5 seconds, what is the frequency of the waves?

$$f = \frac{\text{Waves}}{\text{Time}} = \frac{1}{5} = 0.20\ Hz$$

3. After vigorous exercise, an athlete found his heart rate to be 150 beats per minute.
   a. What is the frequency f of his heartbeat in Hz?

$$f = \frac{\text{Beats}}{\text{Time}} = \frac{150}{60\ Sec} = 2.50\ Hz$$

   b. What is the period of his heartbeat?

$$T = \frac{1}{f} = \frac{1}{2.5} = 0.40\ Sec$$

4. A record rotates on a turntable at 33.3 revolutions per minute (rpm), what is the frequency of the record?

$$f = \frac{\text{Rev}}{\text{Time}} = \frac{33.3}{60} = 0.55\ Hz$$

5. A radio station has a frequency of 95.1 MHz, what is the wave's period? M = mega = 10^6

$$T = \frac{1}{f} = \frac{1}{95.1 \times 10^6} = 1.05 \times 10^{-8}\ Sec$$