# Physics 11

**Extra Practice**

**Short Answer**

1. A wheel is rotating with a frequency of 40Hz. In words explain briefly what this means.
2. How are waves at boundaries different from constructive interference of waves?

**Problems (Show your work)**

1. You are sitting on a dock watching some waves as they roll in. You do a rough estimate and say that the waves are about 4m apart and they hit the dock every 16 seconds. a) What is the frequency? b) What is the velocity of the wave? c) If the waves kept coming at the same rate how many would hit the dock in an hour – show your work?
2. What is the main difference between a transverse wave and a longitudinal wave? Give an example of each type.
3. What is the difference between mechanical waves and electromagnetic waves? **(medium)**
4. A 5m tall Ferris wheel has a period of 4minutes. What does this mean?
5. The ordinary human ear hears two sounds as being distinct if they occur at least 0.10 s apart. How far away must a reflecting surface be from your ear in order to hear an echo, if the air temperature is 25 o C **(17.3m)**
6. Determine the wavelength of a wave that travels at 150 m/s and has a frequency of 35 Hz. How far does the wave travel in 1 hour? **(4.29m, 540km)**
7. A pendulum on a grandfather completes 60 cycles in 2 minutes. a) What is the period? b) What is the frequency? **(1 sec, 1/60th Hz.**
8. A wave travels through a 10m spring in 4 seconds. The source of the vibration creates 5 cycles in 2 seconds. What is the wavelength?
9. Determine the wavelength of a wave that travels at 45 m/s and has a frequency of 67 Hz.