Wave Calculations
wave speed $=$ frequency $x$ wavelength
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1. A student makes regular waves at one side of a swimming pool that is 10 m wide. There are 50 waves across the whole width of the pool.
a. Calculate the wavelength of the waves.
b. If it takes a wave 20 seconds to cross the pool, what is the speed of the waves?
c. Use your answers to a) and b) to calculate the frequency of the waves.
d. Calculate the period of the waves.
e. Calculate how many waves the student would make in one minute.
2. What is the speed of a wave that has a frequency of 50 Hz and a wavelength of 4 m ?
3. Calculate the speed of a wave that has a frequency of 5000 Hz and a wavelength of 20 m
4. A wave has a frequency of 5 Hz and a wavelength of 50 cm . What is its speed?
5. Calculate the speed of a wave that has a frequency of 5 kHz and a wavelength of 4 m
6. Find the frequency of a sound wave of speed $330 \mathrm{~m} / \mathrm{s}$ and wavelength 11 m .
7. What is the frequency of a water wave of speed $12 \mathrm{~m} / \mathrm{s}$ and wavelength 6 m ?
8. Find the wavelength of a radio wave of speed $300000 \mathrm{~km} / \mathrm{s}$ and frequency 1000000 Hz .
9. Calculate the wavelength of a sound wave of speed $5000 \mathrm{~m} / \mathrm{s}$ and frequency 2 kHz .
10. What is the period of a wave that has speed $50 \mathrm{~m} / \mathrm{s}$ and wavelength 10 m ?
11. A wave has a speed of $400 \mathrm{~m} / \mathrm{s}$ and wavelength of 5 m . What is its period?
12. Find the period of a wave that has speed $600 \mathrm{~m} / \mathrm{s}$ and wavelength 25 m .
13. Calculate the period of a wave that has speed $2000 \mathrm{~m} / \mathrm{s}$ and wavelength 4 km .
14. Write your own wave calculation question here:
