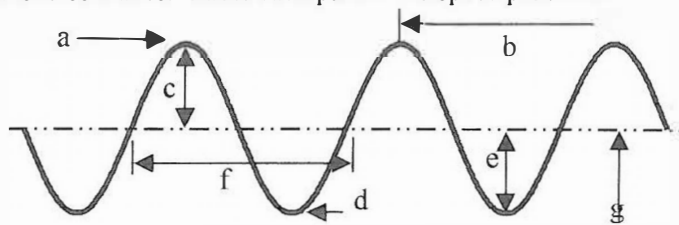


Waves Worksheet 2

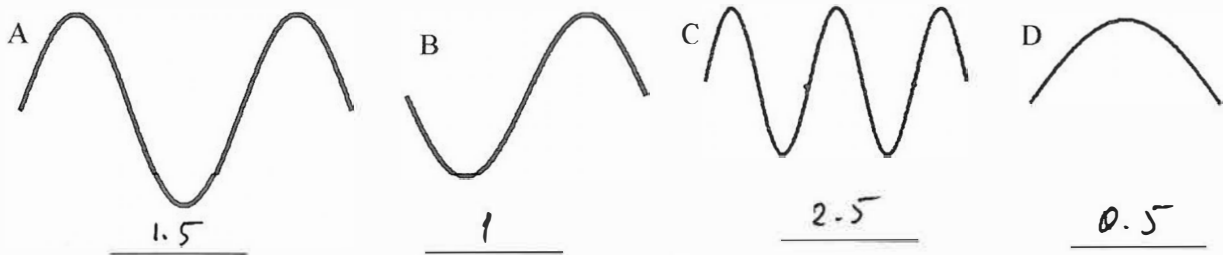
1. The illustration below shows a series of transverse waves. Label each part in the space provided.

- a. crest
- b. λ
- c. A
- d. trough
- e. A
- f. λ
- g. crest



Fill in the blanks:

- 2. Waves carry energy from one place to another.
- 3. The highest point on a transverse wave is the crest while the lowest part is the trough.
- 4. The A is the height of the wave.
- 5. The distance from one crest to the next is the λ .
- 6. Below are a number of series of waves. Underneath each diagram write the numbers of waves in the series.



- a. Which of the above has the biggest amplitude? A
- b. Which of the above has the shortest wavelength? C
- c. Which of the above has the longest wavelength? D

7. Express in words and mathematically the relationship between
a. period and frequency

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

b. wavelength and frequency

$$\lambda = v/f$$

c. wavelength and period

$$\lambda = vT$$

8. Consider a wave generator that produces 10 pulses per second. The speed of the waves is 300. cm/s.

a. What is the wavelength of the waves?

$$\lambda = v/f = 300/10 = 0.3 \text{ m}$$

b. What happens to the wavelength if the frequency of pulses is increased?

$$\lambda \downarrow$$

9. A wave on Beaver Dam Lake passes by two docks that are 40.0 m apart.
 a. If there is a crest at each dock and another three crests between the two docks, determine the wavelength.

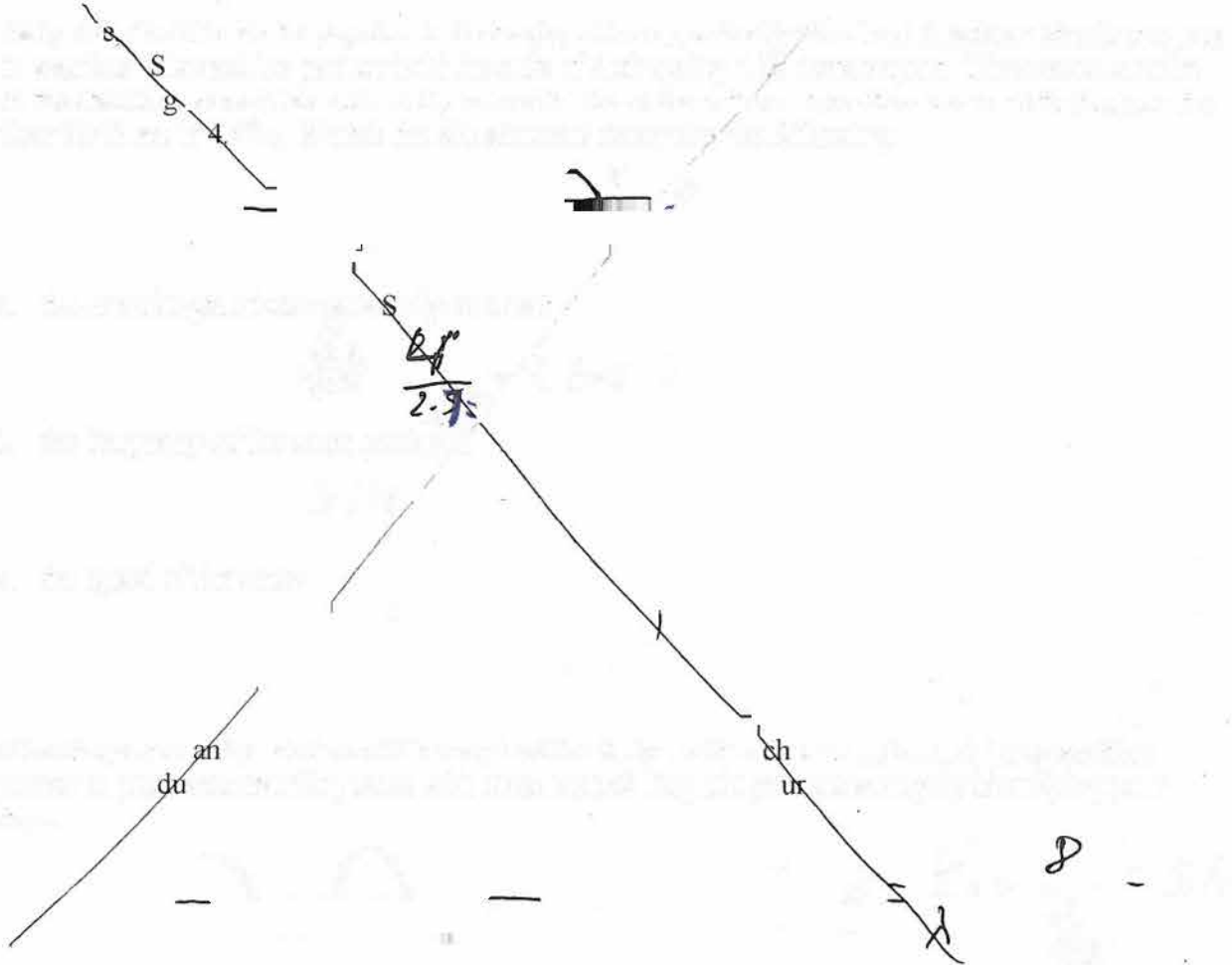


- b. If 10 waves pass one dock every 16.0 seconds, determine the period and frequency of the wave.

$$T = 1.6 \quad f = 0.625 \text{ Hz}$$

- c. What is the speed of the wave?

$$6.25 \text{ m s}^{-1}$$



- 10 The wavelength of a sound wave in this room is 1.13 m and the frequency is 301 Hz.
 a. What is the speed of the wave in the room?

$$v = \lambda f = 340.13 \text{ m s}^{-1}$$

b. If you double the frequency of the sound wave, determine its speed.

340.13

c. What happens to the wavelength if you cut the frequency in half? How do you know?

x 2