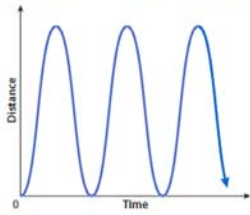**For Exercises 8–10, use the following information.**

Suppose you are pushing your sister on a swing. If you sketch a graph of her distance from you over time, it might look like this.


8. What happens to the distance between you and your sister over time if you push with the same force each time?

9. What do the maximum values in the graph represent? What do the minimum values in the graph represent?

**10.** Where in the graph are the swing's chains perpendicular to the ground? Explain.

⑧ The distance oscillates between 2 distances...the max and min. distance.

⑨ Max. values represent when your sister is the greatest distance away from you. The min. values when she is closest.

⑩ The chains are ⊥ when the swing is exactly halfway between the max. & min. distance, MIN MAX so on the graph that is the halfway point on the graph as well (btwn. the min and max.)
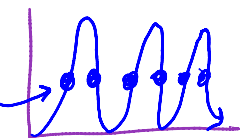
11. The figure shows graphs of three periodic functions. Each function's graph repeats some basic shape. The horizontal axis measures time in seconds.

Find an approximate period and frequency for each graph.
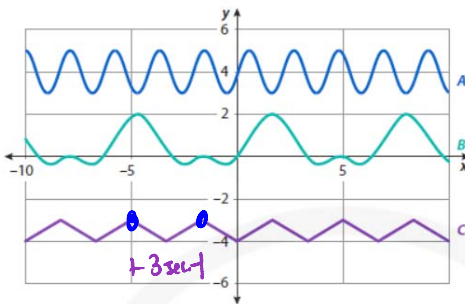
Various Answers.

Pd ≈ 2 sec.   Freq ≈ ½ cycle per sec.

Pd ≈ 6.5 sec.   Freq ≈ .15 cycle per second.

© Pd ≈ 3 sec.   Freq. ≈ $\frac{1}{3}$ or ≈ 0.33 cycle per second

$\frac{\frac{1}{3}}{2} ≈ .15$

11. Sample answers:
Graph A: period ≈ 2 s; frequency ≈ $\frac{1}{2}$ cycle per second
Graph B: period ≈ 6.3 s; frequency ≈ 0.16 cycle per second
Graph C: period ≈ 3 s; frequency ≈ $\frac{1}{3}$ cycle per second

Practice for Lesson 13.2

For Exercises 1–3, use the scatter plot below. The plot represents data collected from a tuning fork with a CBL.

1. Find the period of the sound wave.
2. Find the frequency of the sound wave.
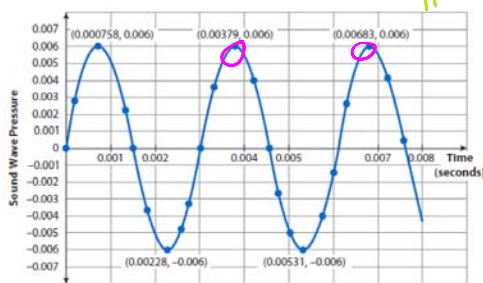
Many possible Answers

① Period : .00683 − .00379 ≈ 0.00304 sec.

② Freq : $\frac{1}{.00304}$ or about 329 cycles per second.

③ Amp : 0.006

For Exercises 1–3, use the scatter plot below. The plot represents data collected from a tuning fork with a CBL.

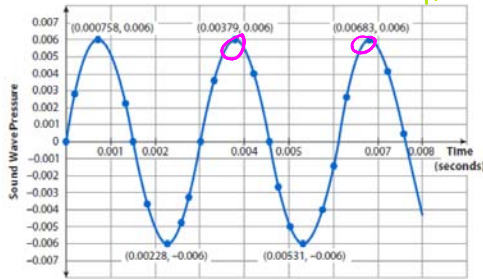Many possible ...

① Period: .00683 – .00379 ≈ 0.00304 sec.

② Freq: $\frac{1}{.00304}$ or about 329 cycles per second.

③ Amp: 0.006

Sound Wave Pressure

(0.000758, 0.006) (0.00379, 0.006) (0.00683, 0.006)

(0.00228, -0.006) (0.00531, -0.006)

Time (seconds)

1. Find the period of the sound wave.
2. Find the frequency of the sound wave.
3. Find the amplitude of the sound wave.

For Exercises 4–9, match each term with its description.

4. large amplitude C
5. small amplitude F
6. period E
7. frequency B
8. low-pitched note D
9. high-pitched note A

A. a sound wave with a short period
B. the number of cycles of a sound wave in one second
C. a loudly played note
D. a sound wave with a low frequency
E. the length of time for one complete cycle of a periodic function
F. a softly played note