Frequency & Period Problems

Physics 11 2019

1. Kristoffer is on a swing that completes 20.0 cycles in 25 seconds. What is the swing's frequency and period?

2. Eduardo clock clicks 88 times in 22 seconds. Calculate the frequency and period of the clock.

3. The time interval between flashes on a stroboscope is 1/80 second. What is the frequency of the light flashes?

4. James has a spring that vibrates 24,000 times in 1.00 minutes. What are the frequency and period of the spring? [Hint: frequency is cycles per second.

5. Abby hits a guitar string and it vibrates 750 times in 3 seconds. Calculate its period and frequency of the string.

6. If 180 waves wash up on shore in 1 hour. What is the time between waves?

7. A ticker tape timer makes 360 dots in 6 seconds. How long does it take to make six dots? [hint: find period first]

8. Period of microwaves used in an experiment is 1.3×10^{-9} seconds. Find the frequency of these waves.

9. A watch spring vibrates at a frequency of 2.55 Hz. How long does it take to make 100 oscillations?

10. A Monkey swings back and forth on a vine at a rate of 1 swing every 3 seconds. Determine the frequency and period of this motion.

Answers:

1. f=0.8 Hz, T=1.25 seconds
2. f=4 Hz. T+0.25 seconds
3. 80 Hz (cycles/second)
4. f=400 Hz T= 0.0025 seconds
5. f=250 Hz T = 0.004 seconds
6. 20 seconds
7. 0.1 seconds
8. 7.7×10^{8} Hz
9. 39.2 seconds
10. f= 0.333 sec. T= 3 sec.