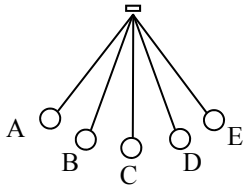
PreAP: Due: Tues., Feb 7 (Assigned: Fri., Feb 3)
Reg: Due: Wed., Feb 8 (Assigned: Mon, Feb 6)

Harmonic Motion 2

1. Give the variables and units for the following quantities:
   A. Period: _____; B. Amplitude: _____; C. Frequency: _____; D. Wavelength: _____

2. Using Figure 1 at the right answer the following:
   A. If you start at A, when does 1 cycle end?
   B. If you start at E, when does 1 cycle end?
   C. If you start at B going right, when does one cycle end?
   D. If you start at C going to the left, when does one cycle end?

Figure 1

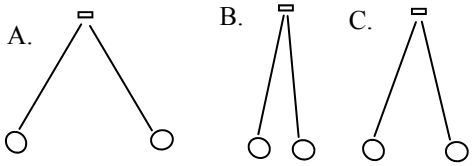


3. If the period of a pendulum is 4 seconds, find the frequency of the pendulum.

4. If the frequency of a wave is 1.35 Hz, find its period.

5. If the frequency of a wave is 0.02 Hz, find its period.

6. If the frequency is bigger, the period is _____.

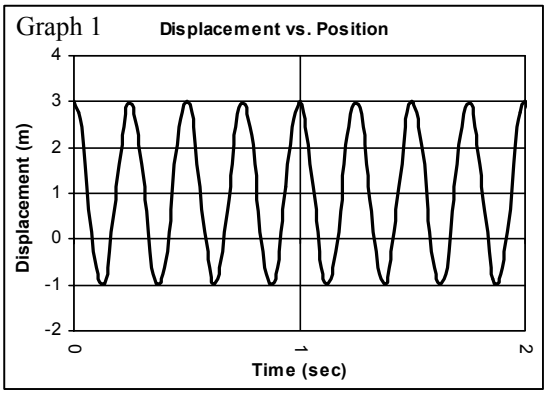


7. Looking at the pendulums at the right, which has the greatest amplitude?
8. Which one of the pendulums has the most energy?
9. Which pendulum has the least energy?
10. So, more amplitude = _____.

11. As a spring moves back and forth faster and faster.
    A. Which gets smaller: period or frequency?
    B. Which gets bigger: period or frequency?

12. Spring 1 is stretched to 5 cm and released. Spring 2 is stretched to 8 cm and released.
    A. What kind of energy does a stretched spring have?
    B. Which spring has the biggest amplitude?
    B. Which spring has the most energy?

Graph 1

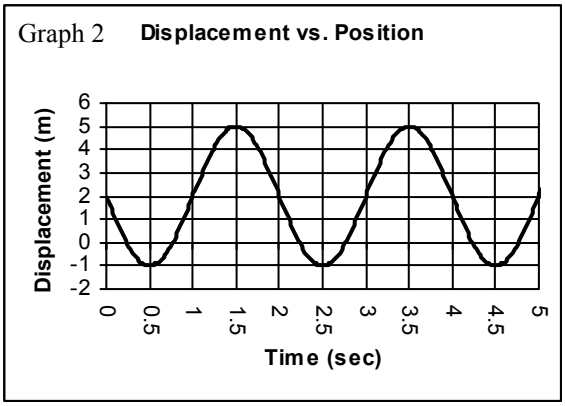


13. Use Graph 1 to answer the following:
    A. What is the amplitude of the graph?
    B. How many cycles happen in 1 second?
    C. So, find the frequency shown on Graph 1.

    D. Find the period shown on Graph 1.

14. Transverse or Longitudinal wave?
    A. ____ A wave is oscillating left and right and moving to the left
    B. ____ A wave is oscillating left and right and moving up.
    C. ____ A wave is oscillating up and down and moving to the left.
    D. ____ A wave is moving up and down and moving up.
    E. ____ Sound. F. ____ Light.

Graph 2



15. Use Graph 2 to answer the following:
A. Find the amplitude.
B. Find the period.

C. Find the frequency.

D. How many cycles are shown?

Use your equation sheet to answer the following.

16. If a pendulum is 4 m long, find its period.

17. If a pendulum is 20 cm long, find its period (length must be in meters for the formula [change this on your variable sheet, period 2]).

18. If it takes 60 N to stretch Spring A 35 cm, find the spring constant for this spring. (Have to have x in meters)

19. If it takes 20 N to stretch Spring B 35 cm, find its spring constant.

20. ____ Which spring above had the bigger spring constant?
21. ____ Which spring above took the most force to stretch it?
22. ____ Which spring had the most energy when stretched?
23. If Spring C has a spring constant of k = 3.4 N/m, Spring D has a constant of k = 1.2 N/m.
    A. ____ Which one will require more force to stretch it?
    B. ____ Which one will store more energy when stretched?

From the TAKS Warmup

24. Mitosis (Mi) or Meiosis (Me)?
    ___ When I scratch my skin the body fixes it by mitosis or meiosis?
    ___ When sperm or egg are produced.
    ___ The result is a haploid cell.
    ___ The result has the same number of chromosomes as the parent.

25. Gamete or Zygote?
    ___ Sex cells
    ___ a fertilized egg
    ___ has a full set of chromosomes
    ___ has a half set of chromosomes
    ___ Is diploid
    ___ Is haploid

26. Haploid or Diploid?
    ___ Has a full set of chromosomes
    ___ Has a half set of chromosomes
    ___ sex cells
    ___ a fertilized egg
    ___ produced in Meiosis
    ___ produced in Mitosis

27. A cell with 24 chromosomes undergoes Mitosis. How many chromosomes does the resulting cell have?

28. A cell with 48 chromosomes undergoes Meiosis. How many chromosomes does the resulting cell have?