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## SHM #1

p 727 MC 1, 3

p 728 Problems 3, 4, 8

(5)

p 727 - Multiple Choice

1) Why is vibrational different from circular?

- Vibrational has equilibrium pt passed from different directions
- Vibrational has periodic change in energy

(2)

3) Meaning of .60s period?

- Time interval to pass through same point in same direction is 0.60s

- Problems

3) exercise stretch cord

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$$F = 50 \text{ N}$$

$$x = 20 \text{ cm}$$

$$k = ?$$

$$k = \frac{F}{x} = \frac{50 \text{ N}}{0.20 \text{ m}} = 250 \text{ N/m}$$

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4) Two exercise cords

a) effective  $K$ ? two cords  $K_{\text{eff}} = 2K$

b) pull one w/  $F = 50\text{N}$   $K_{\text{eff}} = ?$   
stretch 20cm  $2(250\text{ N/m})$

(1)  $\textcircled{1} K = F/x = 50\text{N}/0.20\text{m}$   
 $= 250\text{ N/m}$

$500\text{ N/m}$

8) orchestra  $f = 440\text{ Hz}$   
"concert A"

a)  $T = ?$   $T = 1/f = 1/440\text{Hz} = 2.27 \times 10^{-3}\text{s}$

b) Oxygen molecule

(1)  $\textcircled{2} T = 2.11 \times 10^{-14}\text{s}$   $f = ?$   $f = 1/T = \frac{1}{2.11 \times 10^{-14}\text{s}}$   
 $= 4.74 \times 10^{13}\text{ Hz}$