__C__ **1)** Simple Harmonic Motion (SHM) will result:
A) Only when an object is moving back and forth.
B) Only when an object is rotating to and fro.
C) Whenever a linear force acts to pull an object back to equilibrium.
D) Only when you have a spring present.
E) Any place where you can say that $F = ma$ or $\tau = I\alpha$.

__B__ **2)** If I write down the equation $-A\Psi = B\, d^2\Psi/dt^2$, then ω must be:
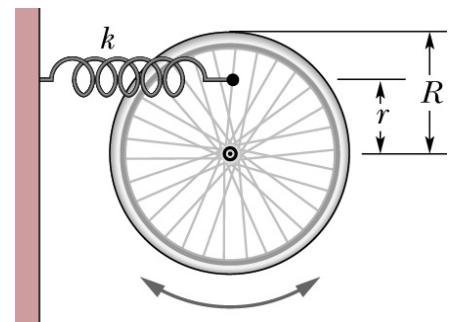A) $(B / A)^{1/2}$
B) $(A / B)^{1/2}$
C) A / B
D) B / A
E) $(A / B)^2$

__E__ **3)** For a simple linear harmonic oscillator, the maximum speed of the mass is given by:
A) $v = k\, x_{max}$
B) $v = (k/m)\, x_{max}$
C) $v = m\omega\, x_{max}$
D) $v = k\omega\, x_{max}$
E) $v = \omega\, x_{max}$

__C__ **4)** In the illustration at right, the torque being applied to
the bicycle wheel is:
A) $-kr$
B) $-kR$
C) $-kxr$
D) kxr
E) $-kxR$

__A__ **5)** Using the illustration above, the correct equation to write down for $\tau = I\alpha$ would be:
A) $-(k\theta r)r = MR^2\alpha$
B) $(k\theta r)r = MR^2\alpha$
C) $-kx = MR^2\alpha$
D) $-(k\theta R)R = MR^2\alpha$
E) $-(k\theta R)r = MR^2\alpha$