NAME _____

Please do not open until instructed to do so.

Make sure you have filled out your SCAN CARD as instructed.

$$\sum \vec{F} = m\vec{a}$$

$$KE = \frac{1}{2}mV^2$$

$$PE_g = mgy$$

$$PE_s = \frac{1}{2}kx^2$$

$$Work = \int \vec{F} \cdot d\vec{S}$$

$$\vec{F} = -\nabla PE = -\frac{\partial PE}{\partial x}\hat{\imath} - \frac{\partial PE}{\partial y}\hat{\jmath} - \frac{\partial PE}{\partial z}\hat{k}$$

$$\vec{F}_{AVG}\, \Delta t = \Delta \vec{p}$$

$$\vec{p} = m\vec{v}$$

$$at^2 + bt + c = 0$$

$$t = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$