Name:	Exercise Type:
J#:	**Quiz**
Date: **2017 June 15**	

Standard: This student is able to...	Mark:
S04: Kinematics. Compute and apply position, velocity, and acceleration vector functions.	
3/3 ⋆ reattempt due on:	

Recall that position in ideal projectile motion is given by $\mathbf{r}(t) = P_0 + \mathbf{v}_0 t - \frac{1}{2} g \hat{\jmath} t^2$ where P_0 is the initial position, $\mathbf{v}_0$ is initial velocity, and g is acceleration due to gravity.

Assume $g = 10$ meters per second squared. Prove that a projectile launched from a height of 60 meters with initial velocity $\langle 7, 20 \rangle$ meters per second will land on the ground after 6 seconds and travel a total of 42 meters horizontally.

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Standard: This student is able to... **C05: VectFuncSTNB.** Compute and apply the arclength parameter and TNB frame for a vector function. 1/4 ⋆ reattempt due on:	Mark:

Find the arclength parameter $s(t)$ for the curve given by $\mathbf{r}(t)=\langle \sin t+\cos t,\sqrt{2}t,\sin t-\cos t\rangle$. Then give the arclength from $t=0$ to $t=3$.