9) $\Delta KE + \Delta U = 0$

$\frac{1}{2}m(v_f^2 - v_i^2) + \frac{1}{2}k(x_f^2 - x_i^2) = 0$

$\frac{1}{2}mv_f^2 = \frac{1}{2}kx_i^2$

$v_f = \sqrt{\frac{kx_i^2}{m}}$ = need to go .27m more in the same amount of time

distance the ball moved : 2.20m − 0.27m = 1.93m

$\frac{d}{t} = v$

$d = vt$

$d + .27m = vt$

$t\sqrt{\frac{x_i^2 k}{m}} - 0.27$