28. (a) We interpret the problem as asking for the equilibrium position; that is, the block is gently lowered until forces balance (as opposed to being suddenly released and allowed to oscillate). If the amount the spring is stretched is x, then we examine force-components along the incline surface and find

$$kx = mg\sin\theta \implies x = \frac{14.0\sin 40.0^\circ}{120} = 0.075 \text{ m}$$

at equilibrium. The calculator is in degrees mode in the above calculation. The distance from the top of the incline is therefore $0.450 + 0.75 = 0.525$ m.

(b) Just as with a vertical spring, the effect of gravity (or one of its components) is simply to shift the equilibrium position; it does not change the characteristics (such as the period) of simple harmonic motion. Thus, Eq. 16-13 applies, and we obtain

$$T = 2\pi\sqrt{\frac{14.0/9.8}{120}} = 0.686 \text{ s} .$$