14. We use Eq. 8-18, representing the conservation of mechanical energy. The reference position for computing U is the lowest point of the swing; it is also regarded as the "final" position in our calculations.

(a) In the solution to problem 8 (to which this problem refers), we found $U = mgL(1 - \cos\theta)$ at the position shown in Fig. 8-29 (which we consider to be the initial position). Thus, we have

$$\begin{aligned} K_i + U_i &= K_f + U_f \\ 0 + mgL(1 - \cos\theta) &= \frac{1}{2}mv^2 + 0 \end{aligned}$$

which leads to

$$v = \sqrt{\frac{2mgL(1 - \cos\theta)}{m}} = \sqrt{2gL(1 - \cos\theta)} \ .$$

Plugging in $L = 2.00$ m and $\theta = 30.0^\circ$ we find $v = 2.29$ m/s.

(b) It is evident that the result for v does not depend on mass. Thus, a different mass for the ball must not change the result.