Speed as a Function of Height of Release

Solution:

The correct answer is b.)

If the ramp is assumed frictionless, energy conservation yields (m = mass of ball):

$$\cancel{m}gh = \left(\frac{1}{2}\right)\cancel{m}v_b^2 \Rightarrow v_b = \sqrt{2gh}$$

Note, again, that a reference level (dashed line) needs to be specified to measure P.E.

h

v_b

REFERENCE FOR P.E.