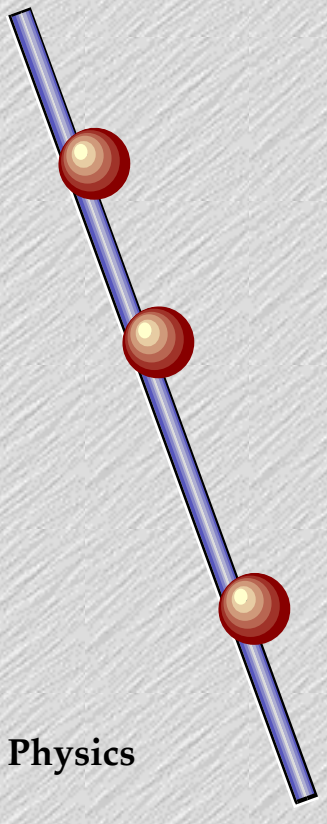
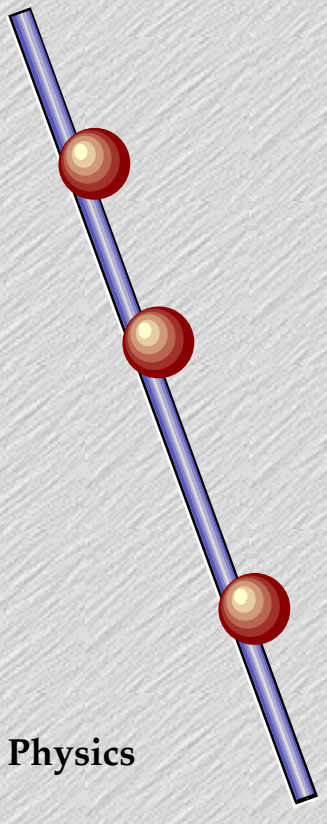
Pellet Gun (#46)



A pellet gun is fired straight down from the edge of a cliff that is 15 m above the ground. The pellet strikes the ground with a speed of 27 m/s. How far above he cliff would the pellet have gone if it were fired straight upward?

Key Phrases



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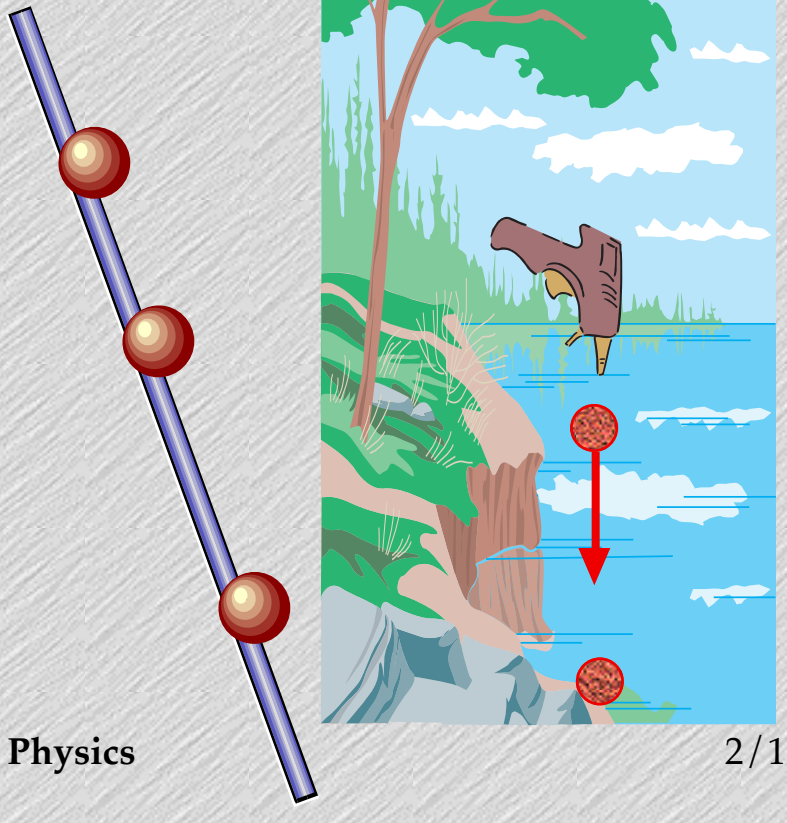

$$d = 15\,m$$

$$v_f = 27\,\frac{m}{s}$$

$$a = g = 9.8\,\frac{m}{s^2}$$

$$2ad = v_f^2 - v_i^2$$

$$v_i = 20.9\,\frac{m}{s}$$

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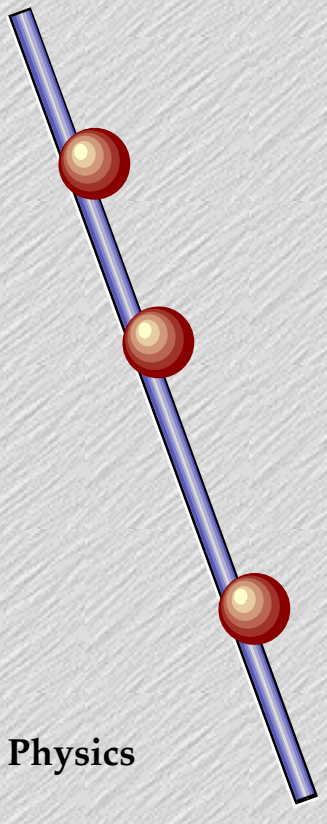

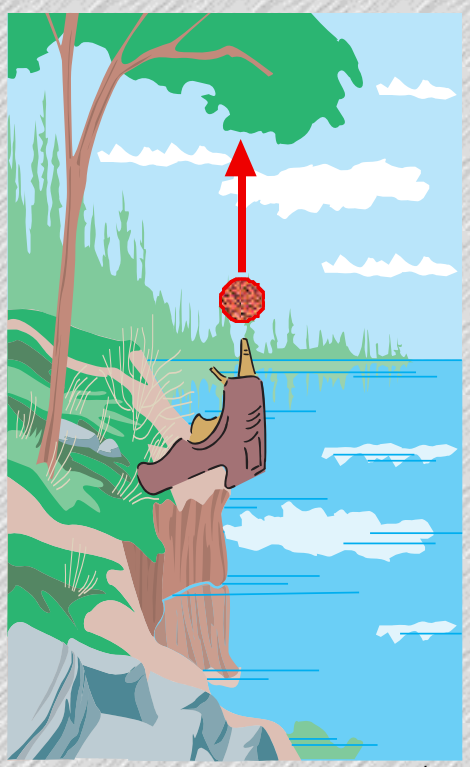

$$v_i = 20.9 \frac{m}{s}$$

$$v_f = 0 \frac{m}{s}$$

$$a = g = -9.8 \frac{m}{s^2}$$

$$2ad = v_f^2 - v_i^2$$

$$d = 22.1m$$