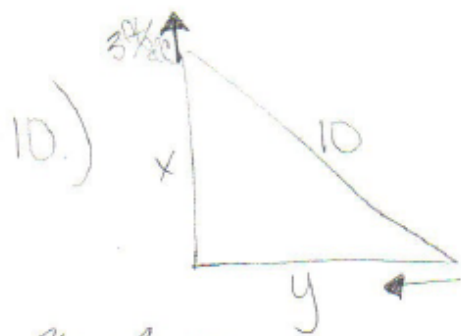


Another analysis example is shown below. This student has no trouble analyzing the problem and creating a diagram and properly labeling with variables.

10. A 10-foot long ladder is leaning against a wall. If the top of the ladder is pulled up along the wall at a rate of 3 feet/second, how fast (in feet/second) is the bottom of the ladder sliding toward the wall when the top of the ladder is 6 feet from the ground?

(A) $7/4$ (B) $3/2$ (C) $9/4$ (D) $3/8$ (E) $7/2$



$$36 + y^2 = 100$$

$$y^2 = 64$$

$$y = 8$$

w.t.f $\frac{dy}{dt}$ when $x = 6$

$$x^2 + y^2 = 10^2$$

$$2x \frac{dx}{dt} + 2y \frac{dy}{dt} = 0$$

$$2(6)(3) + 2(8) \left(\frac{dy}{dt} \right) = 0$$

$$36 + 16 \frac{dy}{dt} = 0$$

$$16 \frac{dy}{dt} = -36 = -2.25 \text{ or } 9/4$$