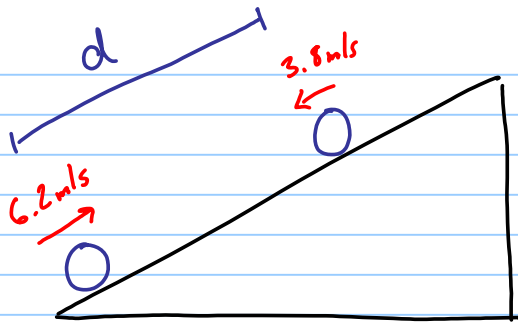


A ball is rolled up an incline at 6.2 m/s . After 2.4 s the ball is rolling *back down* the hill at 3.8 m/s .

- a. What is the ball's acceleration?
- b. What is the ball's displacement after 2.4 s ?



a.) $V = -3.8 \text{ m/s}$ rolling down hill
 $V_0 = 6.2 \text{ m/s}$
 $a =$
 $d =$
 $t = 2.4 \text{ s}$

$$V = V_0 + at \checkmark$$

$$a = \frac{V - V_0}{t} = \frac{-3.8 - 6.2}{2.4}$$

$$= -4.167 \text{ m/s}^2$$

$$= \boxed{-4.2 \text{ m/s}^2} \checkmark \checkmark$$

b.) $V = -3.8 \text{ m/s}$
 $V_0 = 6.2 \text{ m/s}$
 $a = -4.167 \text{ m/s}^2$
 $d =$
 $t = 2.4$

$$V^2 = V_0^2 + 2ad \checkmark$$

$$d = \frac{V^2 - V_0^2}{2a} = \frac{(-3.8)^2 - (6.2)^2}{2(-4.167)}$$

$$= \boxed{2.88 \text{ m}} \checkmark$$