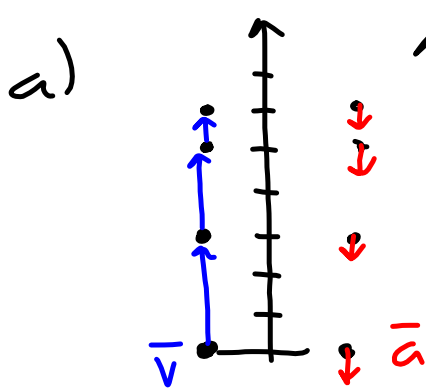


A ball is thrown upward with a velocity of 10 m/s. a) Draw a motion map of the ball from the release to the top of the motion. b) How high did the ball travel? c) How long did it take the ball to reach its peak?



b)

$$v_i = +10 \text{ m/s}$$

$$a = -9.8 \text{ m/s}^2$$

$$v_f = 0 \text{ m/s}$$

$$\Delta x = ?$$

$$v_f^2 = v_i^2 + 2a\Delta x$$

c)

$$v_f = v_i + at$$

$$t = \frac{v_f - v_i}{a}$$

$$= \frac{0 \text{ m/s} - 10 \text{ m/s}}{-9.8 \text{ m/s}^2}$$

$$= 1.02 \text{ s}$$

$$0 = v_i^2 + 2a\Delta x$$

$$\Delta x = \frac{-v_i^2}{2a}$$

$$= \frac{-(10 \text{ m/s})^2}{2(-9.8 \text{ m/s}^2)}$$

$$= 5.1 \text{ m}$$