

Name: \_\_\_\_\_

ID # \_\_\_\_\_

Key

1- A stone is thrown downward from height (h) above the ground with an initial speed of 10 m/s. It strikes the ground 3.0 seconds later. Determine (h).

$$v_0 = -10 \text{ m/s}$$

$$t = 3 \text{ s}$$

$$a = -g$$

we use the equation:

$$\Delta y = v_0 t - \frac{1}{2} g t^2$$

$$\Delta y = -10(3) - \frac{1}{2}(9.8)(3)^2$$

$$= -30 - (4.9)(9)$$

$$= -74.1 \text{ m}$$

⇒

$$h = 74.1 \text{ m}$$

2- The figure shows a graph of position versus time for a particle moving along the x axis. What is the total distance traveled by the particle in 15 s?

from t=0 to t=5

$$\text{distance} = |10 - 5| = 5 \text{ m}$$

from t=5 to t=10

$$\text{distance} = |2.5 - 10| = 7.5 \text{ m}$$

from t=10 to t=15

$$\text{distance} = 0$$

$$\text{Total distance} = 5 + 7.5 + 0 = 12.5 \text{ m}$$

