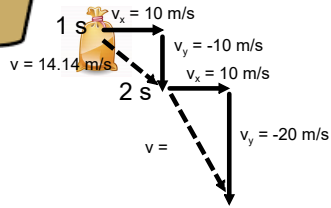


Hot Air Balloon Scale Model



Create a scale model for the velocity of a sand bag thrown from a hot air balloon for 5 seconds.

*Scale: 1 cm = 10 m/s (Use a ruler to scale the size of the vectors appropriately.)

*Use acceleration due to gravity as -10 m/s/s

*t = (Every second for 5 seconds)

* $v_x = 10$ m/s

*Off to the side, show your work for the following for each second of falling:

$$v_y = a \times t$$

$$d_x = v_x \times t$$

$$d_y = 1/2 at^2$$

*Find the overall velocity for each second: $v_x^2 + v_y^2 = v^2$
Show your work.

*Label the velocity vectors, including the overall velocity for each second of falling.