Object thrown up $v_i = 110$ m/s, sketch a v vs t plot of the object from the throw to the peak (use $a = -10$ m/s^2).

Solution:

The time dependence of the velocity

$$v(t) = v_i + at$$

In our case

$$v(t) = 110 - 10t$$

Object reaches the maximum height within the time

$$t = \frac{v_i}{-a} = \frac{110}{10} = 1.1 \text{ s}$$

Thus the v vs t plot of the object is as follows