Initial velocity of a train is 35m/s and acceleration produced is 2m/s (square) in 6 seconds. What is its final velocity?

Solution.

$$v_i = 35\frac{m}{s}, a = 2\frac{m}{s^2}, t = 6s;$$

$$v_f - ?$$

The final velocity of the train moving with acceleration:

$$v_f = v_i + at;$$

v_f - the final velocity of the train;
v_i - the initial velocity of the train;
a - the acceleration of the train.

$$v_f = 35\frac{m}{s} + 2\frac{m}{s^2} \cdot 6s = 47\frac{m}{s}.$$

Answer: The final velocity of the train is $47\frac{m}{s}$.