

A car starts off with a speed of 17 m/s.
 8 seconds later it has a speed of 41 m/s.
 What was the average acceleration of the car?

$$v_i = 17 \text{ m/s}$$

$$t = 8 \text{ sec}$$

$$v_f = 41 \text{ m/s}$$

$$a = ?$$

$$at = v_f - v_i$$

$$a(8) = (41) - (17)$$

$$\frac{8a}{8} = \frac{24}{8}$$

$$a = 3 \text{ m/s}^2$$

A train is accelerating at 1.5 m/s². After 10 seconds it's speed is 27 m/s. What was the train's initial speed?

$$a = 1.5 \text{ m/s}^2$$

$$t = 10 \text{ s}$$

$$v_f = 27 \text{ m/s}$$

$$v_i = ?$$

$$at = v_f - v_i$$

$$(1.5)(10) = 27 - v_i$$

$$15 = 27 - v_i$$

$$\frac{-12}{-1} = \frac{-v_i}{-1}$$

$$12 = v_i$$