

In an automobile race the cars are started with a starter car traveling at 31.5 m/sec. if the lead car has an average acceleration of 4.3m/sec² during the first 3 seconds, how fast was it traveling at the end of 3 seconds and how far did it go?

Solution:

Let:

$$a = 4.3 \text{ m/s}^2$$

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

$$v-?, S-?$$

$$v = at$$

$$S = \frac{1}{2}at^2$$

$$v = 4.3 * 3 = 12.9 \text{ m/s}$$

$$S = \frac{1}{2} * 4.3 * 3^2 = 19.35 \text{ m}$$

Answer: velocity is 12.9 m/s, traveled 19.35 m.