Question#19764

A race car has a mass of 833 kg. It accelerates uniformly from rest, and travels 48.9 m in 3.13 s.Find the net force acting on the car.

Solution:

Let:

$m = 833\ kg$

$S = 48.9\ m$

$t = 3.13\ s$

$F - ?$

According to the second Newton's law:

$F = ma,\ were: a - acceleration$

Such as:

$$S = \frac{1}{2}at^2,\ a = \frac{2S}{t^2}$$

=>

$$F = m\frac{2S}{t^2}$$

$$F = 833\frac{2*48.9}{3.13^2} = 8315,63\ N$$

Answer: 8315.63 N