After a day of testing race cars you decide to take your own 1550-kg car onto the test track while moving down the track at 10.0m/s you uniformly accelerate to 30.0m/s in 10.0s what is the average net force that the track has applied to the car during the 10.0s interval

Solution:

Let:

$m = 1550 \; kg$

$v_0 = 10 \; m/s$

$v = 30 \; m/s$

$t = 10 \; s$

$F - ?$

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

$a = \frac{v - v_0}{t};$

$F = m\frac{v - v_0}{t}$

$F = 1550\frac{30 - 10}{10} = 3100 \; N$

Answer: the average net force is: 3100 N.