

What force is required to accelerate a 1200.0 kg car along a horizontal surface from rest to 130 km/h in 8.0 s? ( $\mu = 0$ )

$N_i = 0$   
 $F = ? = F_{net}$   
 $t = 8.0 \text{ s}$   
 $v_f = 130 \text{ km/h} = 36.1 \text{ m/s}$

~~$F = 1200 \text{ N}$~~

$F_n = m a = (1200)(4.51) = 5412 \text{ N}$   
 $F = \text{Push - Stop}$

*Kinematics*  
 $a = \frac{(36.1) - (0)}{8.0} = 4.51 \text{ m/s}^2$

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