

Question 18981

According to 2nd Newton's law: $ma = -F_f$, where F_f is the friction force. So,

$a = -\frac{5}{2} m/s^2$. Also, $v = v_0 - at$, so at the moment of stop $t = \frac{v_0}{a} = 4 s$. Hence, the box will slide $S = v_0 t - \frac{at^2}{2} = 40 - 20 = 20 m$ far.