P #2

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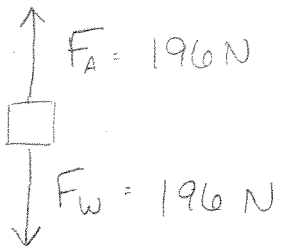
$m = 20.0\ kg$
$W = 6.00\ kJ = 6000\ J$
$a = 0\ m/s^2$

$d = ?$



1) Find the weight of the bucket:

$F_w = m \cdot g$
$= (20.0\ kg)(-9.8\ m/s^2)$

$F_w = 196\ N$

Constant velocity $\Rightarrow$ no acceleration

No acceleration $\Rightarrow$ No net force So... $F_w = F_A = 196\ N$

$W = F \cdot d$ so $6000\ J = (196\ N) \cdot d$

$d = 30.6\ m$