WORK Practice Questions:

① A horse pulls a sleigh at a constant speed of 1.2 m/s with a force of 350N. How much work will be done in 100 seconds?

$W = f \times d$

$f = 350N$

$d = 1.2 m/s \times 100s$

$\hookrightarrow 120m$

$W = (350N)(120m)$

$\boxed{W = 42{,}000\ J}$

② Over what distance must a 400N force be applied to an object so that it gains 1600J of energy?

$W = f \times d$

$f = 400N$

$d = ?$

$W = 1600J$

$\frac{W}{f} = d \left(\text{or } d = \frac{W}{f}\right)$

$\frac{1600J}{400N} = d$

$4 = d$

$\boxed{\text{distance} = 4m}$

③ How much force must be applied to an object so that it gains 100J of Energy (WORK = Energy) over a distance of 20m?

$W = f \times d$

$f = ?$

$d = 20m$

$W = 100J$

$f = \frac{W}{d}$

$f = \frac{100J}{20m}$

$\boxed{f = 5N}$

④ A +20N force is applied to an object that moves 10m in the same direction that the force is applied. How much work is done?

$W = f \times d$

$W = ?$

$f = 20N$

$d = 10m$

$W = 20N \times 10m$

$\boxed{W = 200\ J}$