

**Sangam SKM College - Nadi**

**Solution - Week 1**

**Year 11**

**Physics**

1. Raymond pushes a box of 35kg along the surface of frictionless surface with a force of 400N. If the distance moved while pushing the box is 5m then calculate the work done by Raymond in pushing the box. (*leave 4 lines for working*)

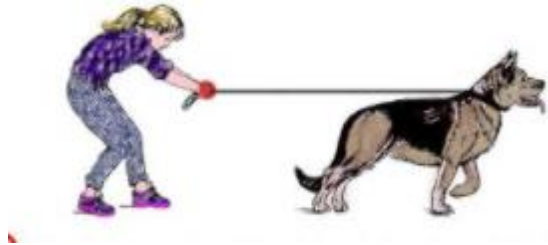
*Force = 400N and d = 5m*

- *since we know that  $W = F \times d(\text{parallel})$*

$$W = (400) \times (5)$$

$$\underline{W = 2000J}$$

2. A dog pulling a 20-kg child-sled combination across a horizontal snowfield accelerates from *rest* to a velocity of 5 m/s over the course of 5 seconds with an acceleration of 1 m/s<sup>2</sup>



How much work does the dog do on the child-sled combination? Assume friction is negligible.

- *To find force we will use Newtons 2<sup>nd</sup> law which is  $F = ma$ , given acceleration as 1m/s<sup>2</sup>.*  
 $F = (80)(1) = 80N$
- *since we know that  $W = F \times d(\text{parallel})$*

$$W = (80) \times (5)$$

$$\underline{W = 400J}$$