

## Homework

$$1) \text{ work done by body in fig. a} = F \times S = W_1 \\ = 1\text{N} \times 1\text{m} = 1\text{J} = W_1$$

$$\text{work done by body in fig. b} = F \times S = W_2 \\ = 3\text{N} \times 0\text{m} = 0\text{J} = W_2$$

$$\text{work done by body in fig. c} = F \times S = W_3 \\ = 2\text{N} \times 1\text{m} = 2\text{J} = W_3$$

$$\text{work done by body in fig. d} = F \times S \times \cos \theta \\ = 2\text{N} \times 2\text{m} \times \cos 90^\circ = 2\text{N} \times 2\text{m} \times 0 = 0\text{J} = W_4$$

∴ Ranking of the boxes according to work done is:

$$= W_2 = W_4 < W_3 < W_1$$

2) c) 1.4 m/s

3) b) its velocity is made four times

4) a) 8J

5) a) 2 times

6) d) independent of mass m.

7) b)  $1.5 \times 10^5 \text{ J}$