

1) ~~(a) 4J~~ (c) 2J > (a) 1J > (b) 0J > (d) -4J

2) mass = 1 kg k.E = 1J
 $k.E = \frac{1}{2} m v^2$

$$1 = \frac{1}{2} v^2 \Rightarrow v = \sqrt{2} = 1.4 \text{ m/s}$$

3) ii) its velocity is made four times

4) Force = 4N, mass = 8kg, distance = 2m
 $k.E = \frac{1}{2} m v^2 = W = FS = 4 \times 2 = 8J$

5) Since $k.E = \frac{P^2}{2m}$

$$P = \sqrt{2 \times k.E \times m}$$

$$\frac{P_2}{P_1} = \frac{\sqrt{2}}{1} = \sqrt{2}$$

6) Directly Proportional to mass

7) $S = 100\text{m}$

$$u = 0$$

$$v = 20 \text{ m/s}$$

$$v^2 + u^2 = 2as$$
$$a = \frac{v^2 + u^2}{2s} = \frac{400}{200} = 2 \text{ m/s}^2$$

~~Work done = FS~~

$$\rightarrow F = ma = 2 \times 500$$
$$1000 \text{ N}$$

$$\text{Work done} = FS$$

$$\Rightarrow 1000 \times 100 = 10^5 \text{ J}$$

$$\text{ie } 1.0 \times 10^5 \text{ J}$$