

Kinetic energy after falling a distance is equal to change of potential energy:

$$Ek = \Delta Ep$$

$$\Delta Ep = m \times g \times \Delta h$$

Where: g is the acceleration due to gravity, Δh height difference (distance)

On a condition: $m = 2 \text{ Kg}$, $\Delta h = 150 \text{ m}$

$$Ek = \Delta Ep = 2 * 9.8 * 150 = 2940 \text{ J.}$$

Answer: Kinetic energy after falling a distance 150 m will be 2940 J.