The task:

the speed of a vehicle of mass 500kg increases its velocity from 56km/hr to 72km/hr.what is the increase in kinetic energy.

Solution:

56 km/hr=16 m/sec

72 km/hr=20 m/sec

A kinetic energy of a vehicle before increasing its velocity is

$$E_1 = \frac{1}{2}mv_1^2$$

And after increasing of the velocity, kinetic energy of the vehicle is

$$E_2 = \frac{1}{2}mv_2^2$$

So the increase in kinetic energy is

$$\Delta E = E_2 - E_1$$

Or

$$\Delta E = \frac{m}{2}(v_2^2 - v_1^2)$$

$$\Delta E = \frac{500\ kg}{2}(20^2 - 16^2) = 36000\ J$$

The answer: $\Delta E = 36\ kJ$