Task. The change in velocity of a body in 30 km/sec in 60 minutes. Calculate the acceleration.

Solution. Acceleration is given by the following formula:

$$a = \frac{\Delta v}{t},$$

where

$$\Delta v$$

is the change of velocity, and t is the corresponding time.

In our case

$$\Delta v = 30\ km/s = 30 * 1000\ m/s = 30000\ m/s,$$

and

$$t = 60\ min = 60 * 60\ s = 3600\ s.$$

Hence

$$a = \frac{\Delta v}{t} = \frac{30000}{3600} = 8.3\ m/s$$

Answer. $a = 8.3\ m/s$.