Answer on Question 63698, Physics, Other

Question:

A rock is thrown upwards with a velocity of $6.0\ ms^{-1}$. What is the maximum height it could reach?

Solution:

We can find the maximum height that the ball can reach from the law of conservation of energy (the kinetic energy of the ball converted to the potential energy at the maximum height):

$$KE = PE,$$

$$\frac{1}{2}mv^2 = mgh,$$

$$\frac{1}{2}v^2 = gh,$$

$$h = \frac{v^2}{2g} = \frac{\left(6.0\ \frac{m}{s}\right)^2}{2 \cdot 9.8\ \frac{m}{s^2}} = 1.8\ m.$$

Answer:

$h = 1.8\ m.$