

<http://ionaphysics.org/lab/Physlets/Accelerated.html>

$$d = v t$$

$$a = (v_f - v_i)/t$$

$$\Rightarrow v_f = v_i + at$$

$$v = (v_f + v_i)/2$$

An object starts at rest and accelerates at  $2 \text{ m/s}^2$ .  
How far will it move in 8 s?

d equals vit plus half a t squared.

d equals vit plus half a t squared.

d equals vit plus half a t squared;

and don't leave out units, you'll incur the wrath!

Time is the only scalar here. A, V and d are vectors.

Solo:

Distance and time, your secrets we've shared.

d equals vit plus half a t squared.

Yes, d is vit plus half a t squared,

And I never make the left-out-units gaffe!

Time is the only scalar here. A, V, and d are vectors.

All:

d equals vit plus half a t squared,

And please don't forget to check the math!

How far will a freely falling object move in 4.2 seconds?

## Textbook page 82

#97 An astronaut drops a feather from 1.2 m above the surface of the Moon. If the acceleration due to gravity on the Moon is  $1.62 \text{ m/s}^2$  downward, how long does it take the feather to hit the Moon's surface?

<http://ionaphysics.org/lab/HammerAndFeatherOnMoon.mpg>

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A police motorcycle is passed by a driver moving at a constant 88 f/s (=60 mi/hr). At the instant the car passes the motorcycle, the officer begins to accelerate at 10 ft/s<sup>2</sup>. How long will it take for the motorcycle to overtake the car.