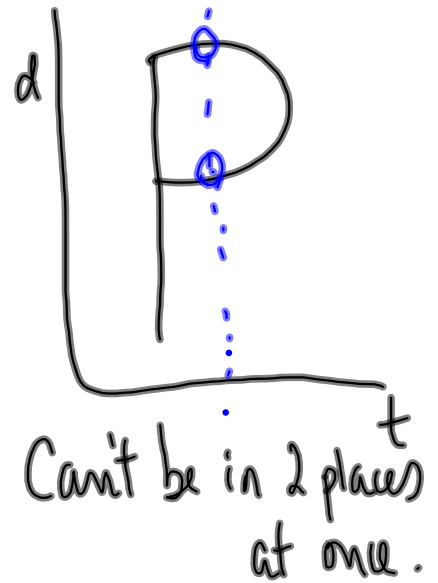
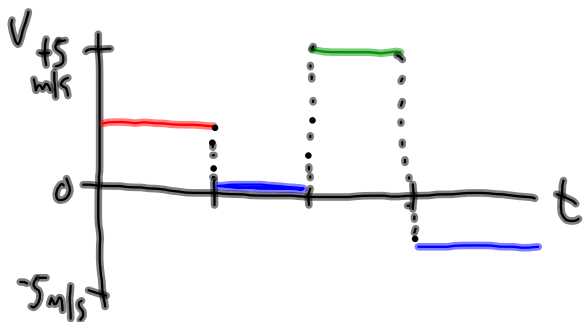
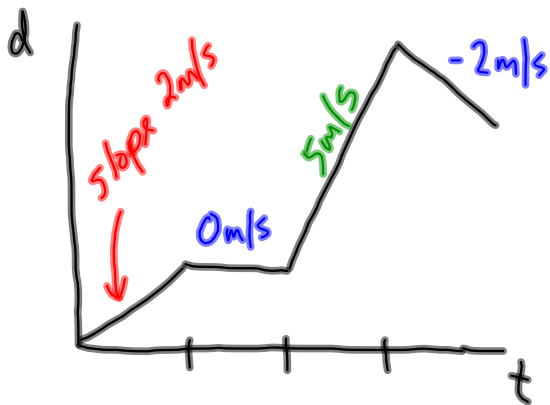


Velocity-Time Graphs



Solving Velocity Problems

GRASP

- Given - what are you given? what do you know?
- Required - what are you trying to find out?
- Analysis - what equation to choose + rearrange if needed.
- Solution - Sub in what you know + solve.
- Paraphrase - write a sentence stating your answer.

Example

A car is travelling at 105 km/h ^v, how far ^{Δd} will it travel in 0.695 s ^{Δt}?

Given

$$v = 105 \text{ km/h} \rightarrow 29.2 \text{ m/s}$$

$$\Delta t = 0.695 \text{ s}$$

Required

$$\Delta d = ?$$

Analysis

$$v = \frac{\Delta d}{\Delta t}$$

$$v \Delta t = \Delta d$$

$$\Delta d = v \Delta t$$

$$\frac{? \text{ m}}{\text{s}} = \frac{105 \text{ km} \left(\frac{1000 \text{ m}}{1 \text{ km}} \right) \left(\frac{1 \text{ h}}{3600 \text{ s}} \right)}{\text{s}}$$

$$\frac{? \text{ m}}{\text{s}} = 29.2 \text{ m/s}$$

Solution

$$\Delta d = (29.2 \text{ m/s})(0.695 \text{ s})$$

$$\Delta d = 20.3 \text{ m}$$

Paraphrase

The car travelled 20.3 m.

What if you wanted to solve for Δt ?

$$\Delta t \cdot v = \frac{\Delta d}{\Delta t} \cdot \Delta t$$

$$\frac{v \Delta t}{v} = \frac{\Delta d}{v}$$

$$\Delta t = \frac{\Delta d}{v}$$

