OCR (B) Physics GCSE

Topic 4.2 - How can we Describe Motion?

Flashcards

What are the 3 main components of motion?

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1. Speed
2. Direction
3. Acceleration (change in speed)

Give the equation for average speed

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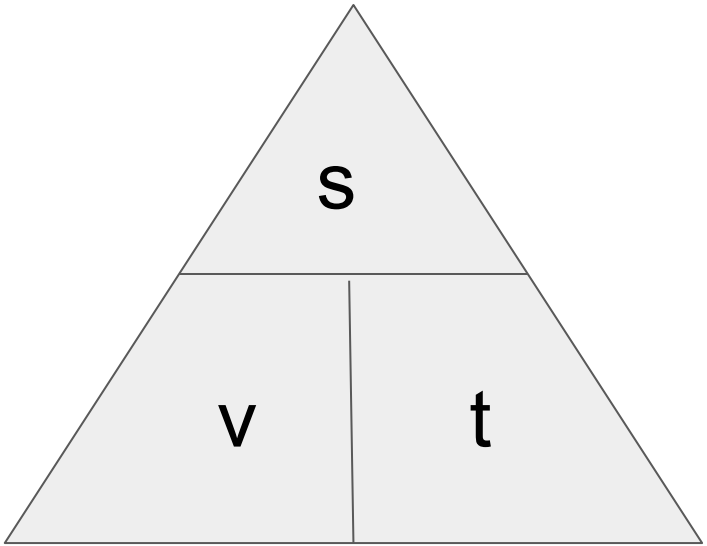
average speed (m/s) = distance (m) ÷ time (s)

$v = s \div t$



What is the difference between distance and displacement?

What is the difference between distance and displacement?

Distance is a scalar quantity; displacement is a vector (distance **and** direction).

What is the difference between speed and velocity?

What is the difference between speed and velocity?

Speed is scalar quantity. Velocity is a vector (speed in a given direction).

Give an estimate of typical walking speed

Give an estimate of typical walking speed

1-2 m/s

Give an equation for acceleration

Give an equation for acceleration

$$\text{acceleration } (m/s^2) = \frac{\text{final velocity - initial velocity } (m/s)}{\text{time } (s)}$$

Give an equation linking acceleration with displacement

Give an equation linking acceleration with displacement

final velocity² (m/s) =

initial velocity² (m/s) + 2 x acceleration (m/s²) x displacement (m)

$$v^2 = u^2 + 2as$$

What is the gradient of a displacement-time graph?

What is the gradient of a displacement-time graph?

The velocity.

What does a curved line represent on a displacement-time graph?

Acceleration (or deceleration).

What does a curved line represent on a displacement-time graph?

What does the gradient of a velocity-time graph represent?

What does the gradient of a velocity-time graph represent?

Acceleration.

What does the area under a velocity-time graph represent?

What does the area under a velocity-time graph represent?

The displacement.

What does a curved line represent on a velocity-time graph?

What does a curved line represent on a velocity-time graph?

Acceleration is not constant.