

# Model answer of revision pack

1  $A_2 = 2.5 \text{ (A)}$

$A_3 = 2.5 \text{ (A)}$

2 a To measure the current in the lamp, **an ammeter** is connected **in series** with the lamp.

b To measure the voltage across the lamp, **a voltmeter** is connected **in parallel** with the lamp.

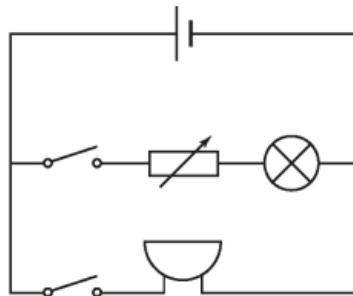
3 a  $1.5 \text{ (V)}$

4 voltage = current x resistance *or*  $V = IR$  *or*  $2 \times 10$

Answer =  $20 \text{ (V)}$

5 circuit drawn with 1 cell, 1 lamp and 1 buzzer in parallel with a switch on each branch  
variable resistor in series with the lamp

no gaps at corners and no wires drawn through or into components



1  $\Omega$

2 It makes it more difficult for current to flow.

3 Voltage /  $V$  in top of triangle; current /  $I$  at the bottom right.

Ohm's law

c i  $\text{resistance} = \frac{\text{voltage}}{\text{current}} = \frac{6}{2} = 3\Omega$

ii  $\text{current} = \frac{\text{voltage}}{\text{resistance}} = \frac{12}{3} = 4\text{ A}$

- a) Particles of the air (gas) collide with the walls of the tyres causing a force on these walls
- b) increase  
particles have more energy, so they move faster making more collisions with the walls which makes a greater force

- a) The pressure increases
- b) The pressure decreases
- c) Particles of the air (gas) collide with the sides of the beaker causing a force on these sides

Mike is half the weight of Oliver & Mike is twice as far from the pivot than Oliver.

Mike's moment is  $500 \times 2$  or  $1000 \text{ (Nm)}$

Oliver's moment is  $1000 \times 1$  or  $1000 \text{ (Nm)}$

So, Mike's moment is equal to Oliver's moment

b) i)  $\text{Moment} = \text{Force} \times \text{Distance} = 50 \times 0.3 = 15 \text{ Nm}$

Distance-time graph:

a)  $\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$   
 $= \frac{300}{15} = 20 \text{ m/s}$

b) Stops / At rest

c) Returns back to the starting point

d) faster

**1** It contains a branch / there is more than one path for the current to flow / each component is connected across the battery.

**2 a**  $3 + 2 = 5 \text{ A}$

**b**  $(A_1 =) A_2 + A_3$

**3 a**  $12 \text{ V}$

**b**  $12 \text{ V}$

**a)** Because the forces are equal (balanced)

**b)** The force from James decreased (became less)