

Name:

Class:



Which quantity is a vector?

- A** acceleration
 B distance
 C speed
 D mass

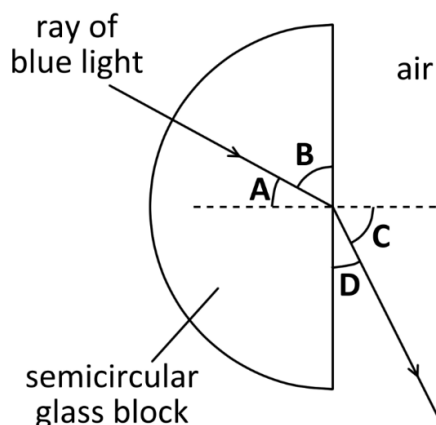
A wave of frequency 6600 Hz travels 1320 m in 4.0 s. What is the wavelength?

$$S = d \div t \quad S = 1320 \div 4 \quad S = 330 \text{ m/s}$$

$$\lambda = v \div f \quad \lambda = 330 \div 6600 \quad \lambda = 0.05$$

$$\text{Wavelength} = \mathbf{0.05 \text{ m}}$$

The figure below shows a ray of blue light passing through a semicircular glass block.



i. State the term for the dotted line shown in the figure.

The normal

 ii. State which angle **A**, **B**, **C** or **D** is the angle of incidence or the ray of blue light.

A

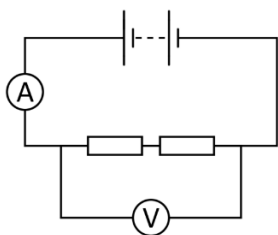
 iii. State which angle **A**, **B**, **C** or **D** is the angle of refraction.

C

iv. State what happens to the speed of the blue light as it enters the semicircular glass block from the air.

It decreases.

The voltmeter reading is 2.2V and the ammeter reading is 0.25A.



What is the resistance of each resistor?

$$R = V \div I \quad R = 2.2 \div 0.25 = 8.8 \div 2$$

$$\text{Each resistor} = \mathbf{4.4 \, \Omega}$$

A pendulum makes 50 complete swings in 2 min 40 s.

What is the time period for 1 complete swing?

$$2 \text{ min } 40 \text{ s} = 160 \text{ s}$$

$$160 \text{ s} \div 50 = \mathbf{3.2 \text{ seconds}}$$

A sledge is pulled in a straight line by dogs, as shown.



The dogs produce a total horizontal driving force of 600 N.

The frictional force between the sledge and the surface is 150 N and the air resistance on the sledge is 450 N. What is the resultant force acting on the sledge?

$$600 \text{ N} - 450 \text{ N} - 150 \text{ N} = 0 \text{ N}$$

$$\text{resultant force} = \mathbf{0 \text{ N}}$$