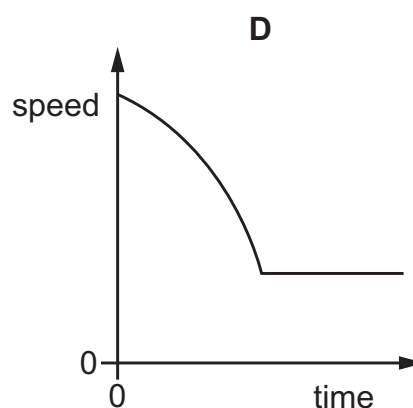
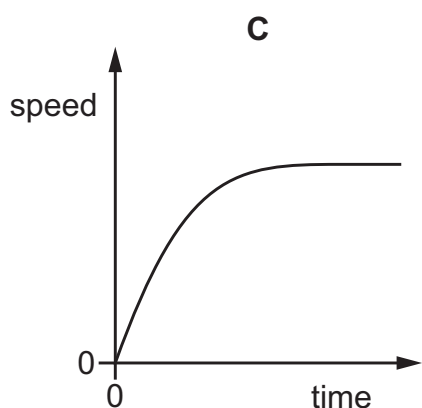
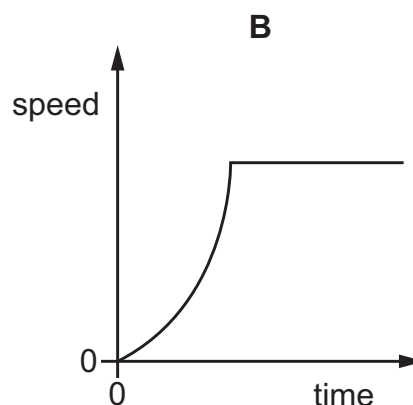
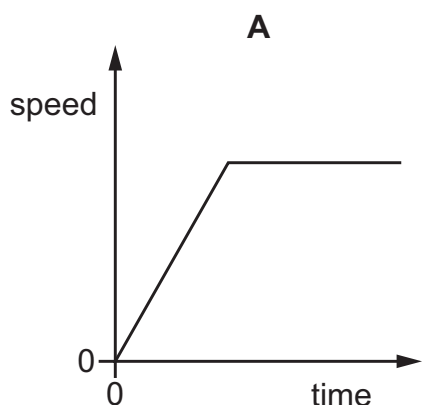


- 3** An object reaches terminal velocity after being dropped and falling through air.

Which graph shows how its speed varies with time?



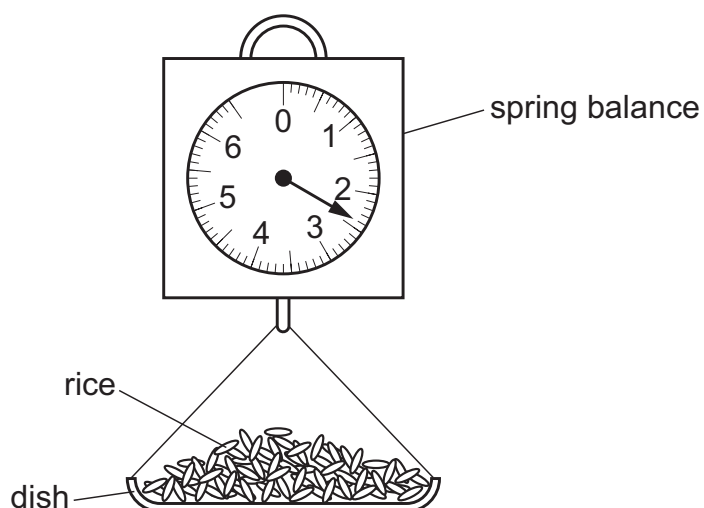
- 2** An object falls towards the surface of the Earth.

The object is falling at its terminal velocity.

Which statement is correct?

- A** There is air resistance and the acceleration of the object is negative.
- B** There is air resistance and the acceleration of the object is zero.
- C** There is no air resistance and the acceleration of the object is negative.
- D** There is no air resistance and the acceleration of the object is zero.

- 5 A shopkeeper pours rice into a dish that hangs from a spring balance. He records the reading.



A customer buys some pasta. The shopkeeper notices that the reading on the spring balance, with just pasta in the dish, is the same as it was with just rice in the dish.

Which quantity **must** be the same for the rice and for the pasta?

- A density
- B temperature
- C volume
- D weight

- 1 A student determines the diameter of a metal ball.

Which apparatus is needed to get an accurate measurement?

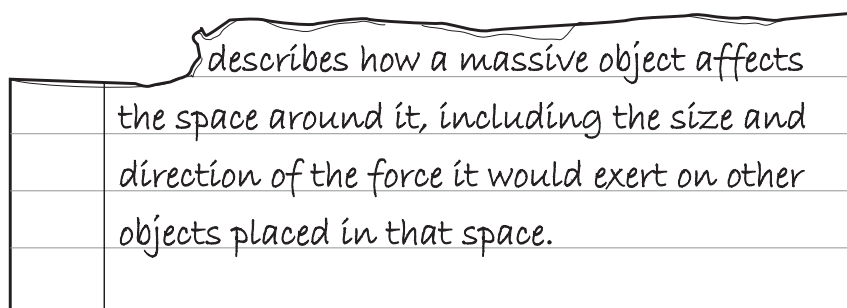
- A a ruler and a protractor
- B a ruler only
- C a protractor and a set square
- D a ruler and two rectangular blocks

- 2 An athlete runs at a speed of 8 m/s for 10 s, and then at a speed of 6 m/s for 12 s.

Which calculation gives the average speed of the athlete in m/s?

- A  $\frac{8 + 6}{2}$
- B  $\frac{(8 \times 10) + (6 \times 12)}{22}$
- C  $\frac{(8 \div 10) + (6 \div 12)}{22}$
- D  $\frac{(10 \div 8) + (12 \div 6)}{22}$

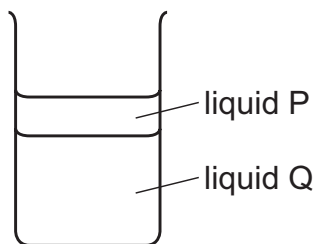
- 3 A piece of paper torn out of an exercise book is shown.



What is being described?

- A gravitational charge
- B gravitational field
- C gravitational mass
- D gravitational potential energy

- 4 The diagram shows one liquid floating on top of another liquid.



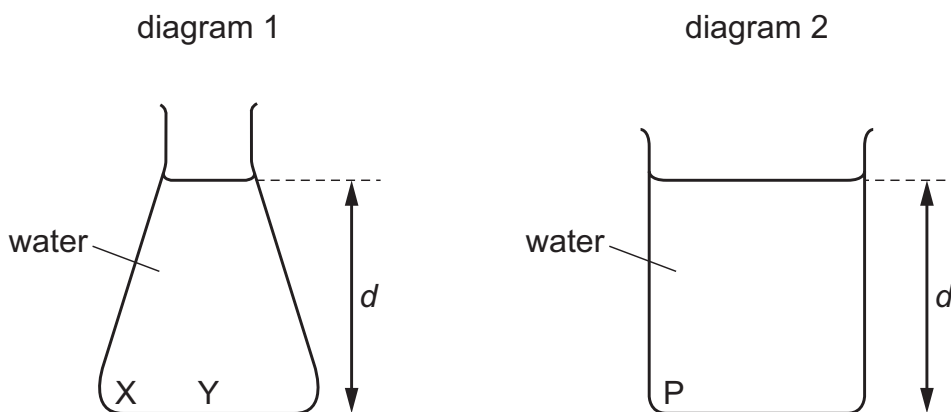
Which statement explains why liquid P floats on top of liquid Q?

- A The mass of liquid Q is greater than the mass of liquid P.
  - B The mass of  $1 \text{ cm}^3$  of liquid Q is greater than the mass of  $1 \text{ cm}^3$  of liquid P.
  - C The volume of liquid Q is greater than the volume of liquid P.
  - D The volume of 1 g of liquid Q is greater than the volume of 1 g of liquid P.
- 7 The momentum of a car changes from  $10\,000 \text{ kg m/s}$  to  $15\,000 \text{ kg m/s}$  in a time of 8.0 s.

What is the resultant force acting on the car?

- A 630 N
  - B 3100 N
  - C 40 000 N
  - D 200 000 N
- 9 Diagram 1 shows a conical flask containing water.

Diagram 2 shows a beaker with the same base area as the flask and containing water of the same depth  $d$ .



Which statement is correct?

- A The pressure at P is equal to the pressure at X.
- B The pressure at P is greater than the pressure at Y.
- C The pressure at P is greater than the pressure at X.
- D The pressure at Y is greater than the pressure at X.

**1** Which quantities are both vectors?

- A** acceleration and force
- B** acceleration and pressure
- C** density and force
- D** density and pressure