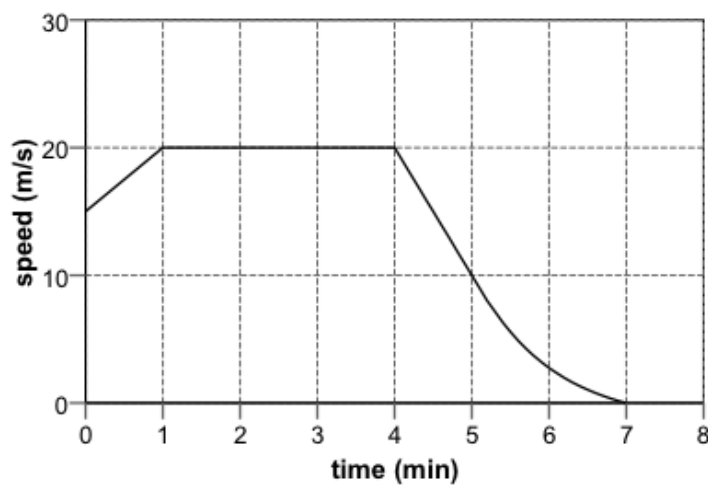




Speed, Distance & Time

2009

15 The graph represents the motion of a vehicle during part of a journey.



What is the best estimate of the distance travelled during the part of the journey shown?

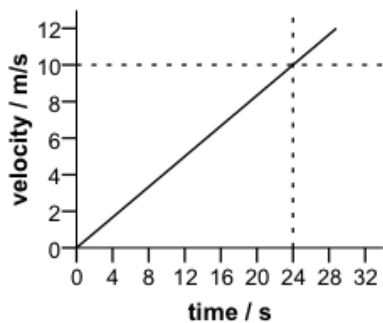
- A 100.00m
- B 107.50m
- C 115.00m
- D 6.00km
- E 6.45km
- F 6.90km



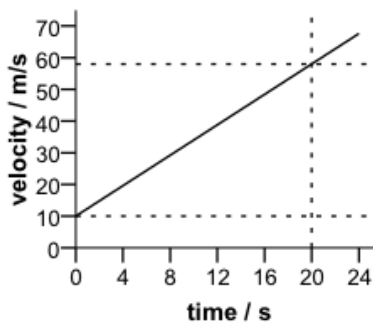
Speed, Distance & Time

2010

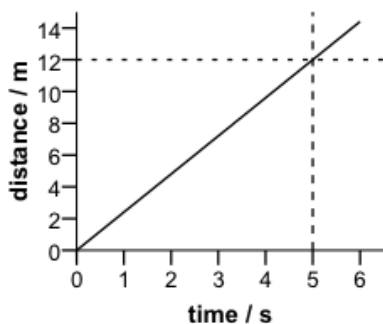
19 The diagrams below show velocity-time or distance-time graphs for 4 different objects, P, Q, R and S.



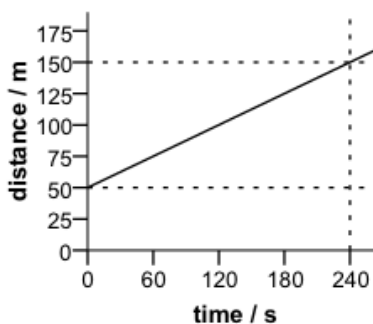
P



Q



R



S

Which graph(s) show an object accelerating at 2.4m/s^2 ?

- A P only
- B Q only
- C R only
- D S only
- E P and Q
- F Q and R
- G P and S



Speed, Distance & Time

2015

- 23 A car is being driven at 20 m/s when the driver sees a child run into the road. The driver's usual reaction time is 0.70 s , but this is doubled because the driver is tired. Once the driver applies the brakes, the car is brought uniformly to rest in a further 3.3 s . What is the total distance travelled by the car between when the driver first sees the child to when the car stops?
- A 33 m
 - B 40 m
 - C 47 m
 - D 61 m
 - E 66 m
 - F 80 m
 - G 94 m



Speed, Distance & Time

2017

- 19** A swimming pool is 10 m wide. A loud sound is made in the water 2.0 m from one wall and the reflected sounds are detected with a microphone placed next to the sound source. The reflection from the wall 8.0 m away arrives 0.010 s after the reflection from the wall 2.0 m away.

What is the speed of sound in water?

- A** 270 m/s
- B** 330 m/s
- C** 530 m/s
- D** 600 m/s
- E** 1200 m/s



Speed, Distance & Time

2018

- 11 Quantities associated with a moving vehicle include its velocity, speed, momentum and kinetic energy.

Which of these quantities will **always** change if the vehicle changes direction?

- A speed and kinetic energy only
- B speed and momentum only
- C speed, kinetic energy and momentum only
- D velocity and kinetic energy only
- E velocity and momentum only
- F velocity, kinetic energy and momentum only

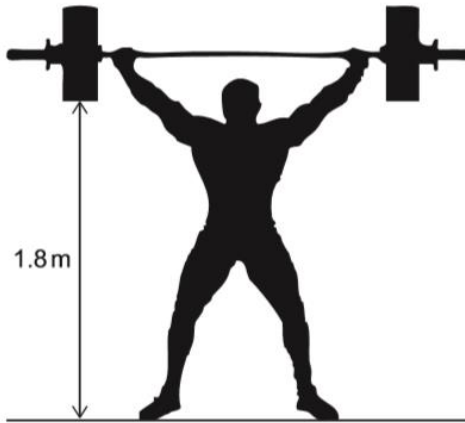


Speed, Distance & Time

- 15 A champion weightlifter raises a 200 kg set of weights from the floor to above his head in one movement.

The bar is lifted through a vertical distance of 1.8 m.

When the lift is completed the weightlifter holds the weights stationary for 2.0 seconds and then drops them to the floor.



At what speed do the weights hit the floor?

(gravitational field strength = 10 N/kg)

- A 0.90 m/s
- B 1.1 m/s
- C 3.0 m/s
- D 3.6 m/s
- E 6.0 m/s
- F 9.0 m/s
- G 18 m/s
- H 36 m/s