Topical Past Paper Questions Workbook

IGCSE Physics (0625) Paper 2 [Extended]

Multiple Choice Questions

Exam Series: May/June 2012 - February/March 2022

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Introduction

Each topical past paper questions workbook consists of hundreds of questions and their answer schemes, in the form of worksheets. Questions are assigned to each chapter according to their corresponding topic. Topics, in turn, are based on the items of the latest Cambridge IGCSE or AS/A level syllabus content. This book's specifications are as follows:

Title: IGCSE Physics (0625) Paper 2 Topical Past Paper Workbook
Subtitle: Exam Practice Worksheets With Answer Scheme
Examination board: Cambridge Assessment International Education (CAIE)
Subject code: 0625
Years covered: May/June 2012 - February/March 2022
Paper: 2 [Extended] (Multiple Choice Questions)
Number of pages: 968
Number of questions: 2181

Contents

Chapter 1

General physics

1.1 Length and time

1. 0625_m22_qp_22 Q: 1

A student investigates a pendulum.

He measures the time for the pendulum to complete 20 oscillations.

He repeats the experiment three more times.

The readings are shown.

experiment	time for 20 oscillations / s
1	17.6
2	19.8
3	17.6
4	18.6

What is the average period of the pendulum?

A 0.88 s **B** 0.92 s **C** 17.6 s **D** 18.4 s

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2. 0625_m21_qp_22 Q: 1

A student has a measuring cylinder containing water and also has a balance.

Which of these could she use to find the volume of a small metal sphere?

She has no other apparatus.

A either the measuring cylinder containing water or the balance

B the measuring cylinder containing water only

C the balance only

D neither the measuring cylinder nor the balance

---

3. 0625_s21_qp_21 Q: 1

The diagram shows a stone of irregular shape.

Which property of the stone can be found by lowering it into a measuring cylinder half-filled with water?

A length

B mass

C volume

D weight

---

4. 0625_s21_qp_22 Q: 1

Which piece of apparatus is the most suitable for measuring the mass of a pencil sharpener?

A digital balance

B measuring cylinder

C newton meter

D ruler

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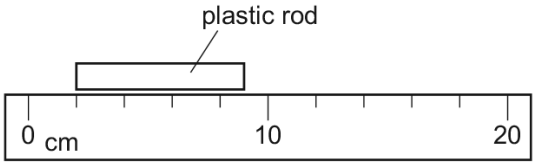
5. 0625_s21_qp_23 Q: 1

The diagram shows a plastic rod alongside a ruler.



What is the length of the rod?

A 2.5 cm **B** 3.5 cm **C** 7.0 cm **D** 9.0 cm

---

6. 0625_w21_qp_21 Q: 1

Which instrument is most suitable for measuring the thickness of a single sheet of paper?

A 15 cm rule

B balance

C metre rule

D micrometer screw gauge

---

7. 0625_w21_qp_22 Q: 1

A student is taking some measurements.

Which measurement is taken directly using a micrometer screw gauge?

A $0.52\,g/mm^2$ **B** $0.52\,g/mm^3$ **C** $0.52\,mm$ **D** $0.52\,mm^2$

---

8. 0625_w21_qp_23 Q: 1

For which purpose is a micrometer screw gauge suitable?

A measuring the current in a coil that is known to be about $3 \times 10^{-6}\,A$

B measuring the diameter of a ball bearing that is known to be about $3 \times 10^{-3}\,m$

C measuring the mass of a grain of sand that is known to be about $3 \times 10^{-3}\,g$

D measuring the moment used to turn a screw that is known to be about $3 \times 10^{-6}\,N\,m$

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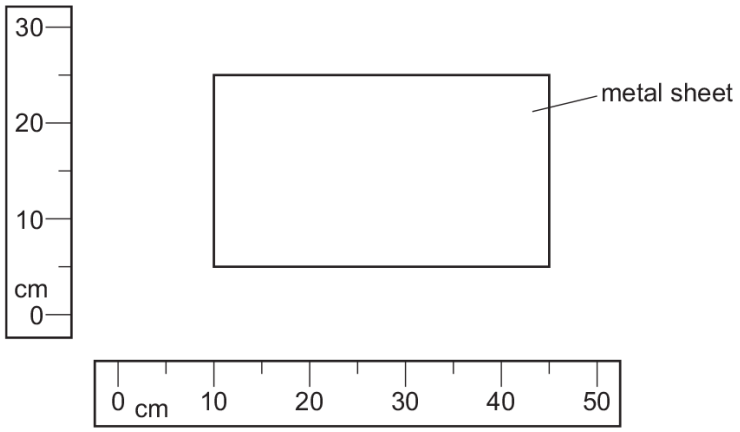
9. 0625_m20_qp_22 Q: 1

The diagram shows a rectangular metal sheet close to two rulers.



What is the area of the metal sheet?

A $700\,cm^2$ **B** $875\,cm^2$ **C** $900\,cm^2$ **D** $1125\,cm^2$

---

10. 0625_p20_qp_20 Q: 2

Which measurement can be made using a micrometer screw gauge?

A the air pressure of a tyre

B the diameter of a wire

C the turning effect of a spanner

D the wavelength of microwaves

---

11. 0625_s20_qp_21 Q: 1

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

What is the time period for 1 complete swing?

A 1.6 s **B** 3.2 s **C** 4.8 s **D** 6.4 s

---

12. 0625_s20_qp_22 Q: 1

Five athletes P, Q, R, S and T compete in a race. The table shows the finishing times for the athletes.

athlete	P	Q	R	S	T
finishing time / s	22.50	24.40	25.20	26.50	23.20

Which statement is correct?

A Athlete P won the race and was 0.70 s ahead of the athlete in second place.

B Athlete P won the race and was 1.90 s ahead of the athlete in second place.

C Athlete S won the race and was 1.30 s ahead of the athlete in second place.

D Athlete S won the race and was 2.10 s ahead of the athlete in second place.

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13. 0625_s20_qp_23 Q: 1

Diagram 1 shows a solid, rectangular-sided block.

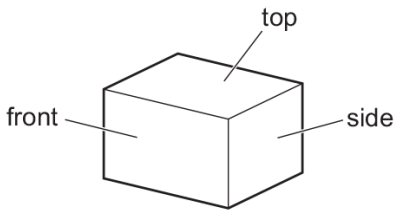

diagram 1

Diagram 2 shows the same block from the front and from the side.

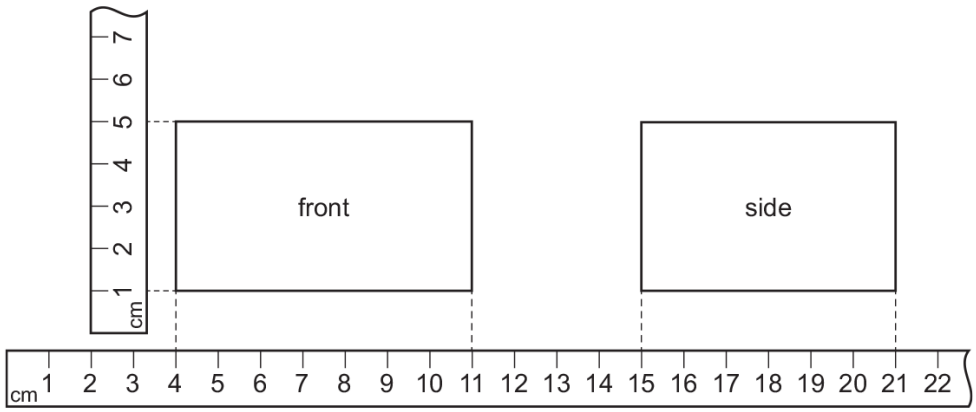

diagram 2

Metre rules have been shown close to the edges of the block.

What is the volume of the block?

A 120 cm^3 **B** 168 cm^3 **C** 264 cm^3 **D** 1155 cm^3

---

14. 0625_w20_qp_21 Q: 1

For which one of the following measurements would a micrometer screw gauge be most suitable?

A length of this page

B length of a pencil

C diameter of a wire

D diameter of an atom

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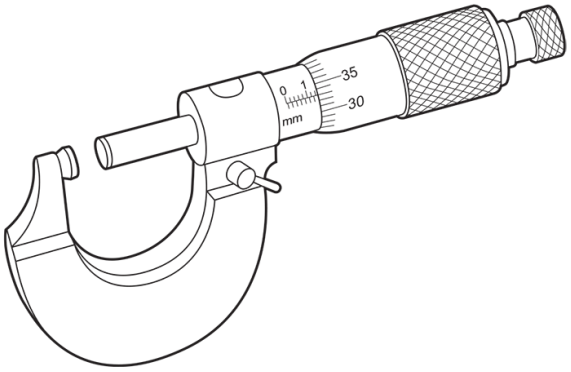
15. 0625_w20_qp_22 Q: 1

The diagram shows a measuring device.



For which measurement is this device suitable?

A diameter of a cylinder of aluminium of about 20 cm

B distance between two molecules of zinc

C length of a rod of iron of about 1 m

D thickness of a sheet of copper of about 1.5 mm

---

16. 0625_w20_qp_23 Q: 1

A micrometer screw gauge reads 0.02 mm when the jaws are fully closed. It reads 0.56 mm when measuring the diameter of a metal wire.

What is the diameter of the wire?

A 0.36 mm **B** 0.54 mm **C** 0.56 mm **D** 0.58 mm

---

17. 0625_m19_qp_22 Q: 1

Which row shows the best choice of measuring instruments to obtain accurate values for the distances shown?

	diameter of wire	height of bench	length of laboratory
A	measuring tape	measuring tape	micrometer screw gauge
B	metre rule	micrometer screw gauge	measuring tape
C	micrometer screw gauge	measuring tape	metre rule
D	micrometer screw gauge	metre rule	measuring tape

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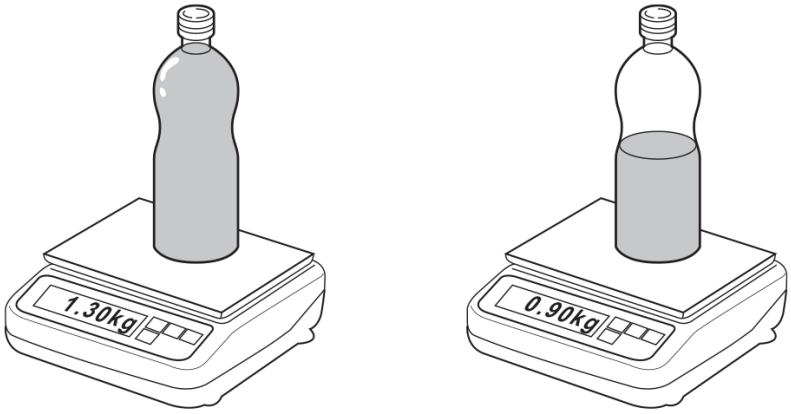
18. 0625_m19_qp_22 Q: 5

The mass of a full bottle of cooking oil is 1.30 kg.

When exactly half of the oil has been used, the mass of the bottle plus the remaining oil is 0.90 kg.



What is the mass of the empty bottle?

A 0.40 kg **B** 0.50 kg **C** 0.65 kg **D** 0.80 kg

---

19. 0625_s19_qp_22 Q: 1

Which quantity can be measured directly using a micrometer screw gauge?

A the area of a sheet of paper

B the mass of a sheet of paper

C the thickness of a sheet of paper

D the volume of a sheet of paper

---

20. 0625_w19_qp_21 Q: 1

A student measures the diameter of a pencil.

Which measuring instrument will give the most precise reading?

A a measuring tape

B a metre rule

C a micrometer screw gauge

D a ruler

---

21. 0625_w19_qp_22 Q: 1

A student measures the dimensions of a cylindrical glass beaker.

For which measurement should she use a micrometer screw gauge?

A circumference of the beaker

B diameter of the beaker

C height of the beaker

D thickness of the glass wall of the beaker

---

22. 0625_w19_qp_23 Q: 1

Which is the best apparatus to use to measure the thickness of a coin?

A balance

B ruler with a millimetre scale

C micrometer screw gauge

D pressure gauge

---

23. 0625_m18_qp_22 Q: 1

Which instrument is used to measure accurately the diameter of a thin metal wire?

A 30 cm ruler

B measuring tape

C metre rule

D micrometer screw gauge

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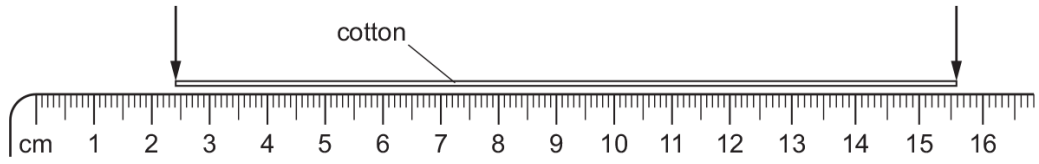
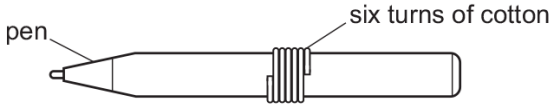
24. 0625_s18_qp_21 Q: 1

A length of cotton is measured between two points on a ruler.



When the length of cotton is wound closely around a pen, it goes round six times.



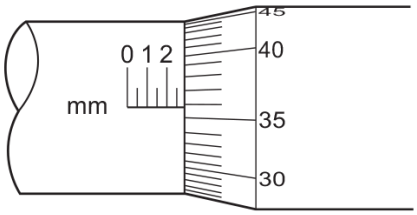
What is the distance once round the pen?

A 2.2 cm **B** 2.6 cm **C** 13.2 cm **D** 15.6 cm

---

25. 0625_w18_qp_21 Q: 1

The diagram shows part of a micrometer screw gauge.



What is the smallest reading that can be achieved using this micrometer screw gauge?

A 0.0001 mm **B** 0.01 mm **C** 0.1 mm **D** 1 mm

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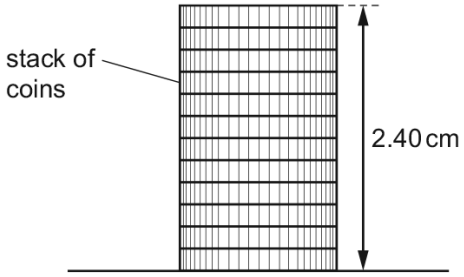
26. 0625_m17_qp_22 Q: 1

The diagram shows the height of a stack of identical coins.



What is the thickness of one coin?

A 0.20 mm **B** 2.0 mm **C** 0.24 cm **D** 2.0 cm

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27. 0625_s17_qp_22 Q: 1

What is the most accurate and precise method to measure the thickness of a coin?

A Use a micrometer screw gauge.

B Use a ruler and look at the scale perpendicularly.

C Use a top pan balance.

D Use the displacement method with water in a measuring cylinder.

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28. 0625_s17_qp_23 Q: 2

A pendulum is swinging. Five students each measure the time it takes to swing through ten complete swings.

Three students measure the time as 17.2 s. Another student measures it as 16.9 s, and the fifth student measures it as 17.0 s.

What is the average period of the pendulum?

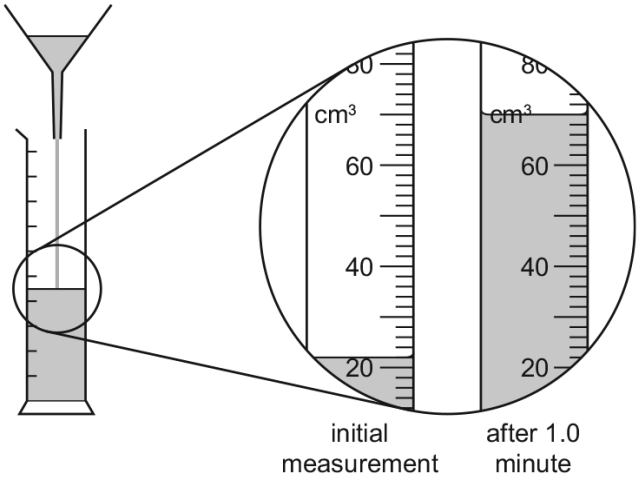
A 1.69 s **B** 1.70 s **C** 1.71 s **D** 1.72 s

---

29. 0625_w17_qp_22 Q: 1

A student investigates the rate of flow of oil through a funnel.

The diagrams show the experiment and the volume of oil in the measuring cylinder at the start of the experiment, and one minute later.



What is the rate of flow of oil through the funnel during the one minute?

A 0.73 cm^3/s **B** 0.80 cm^3/s **C** 44 cm^3/s **D** 48 cm^3/s

---

30. 0625_m16_qp_22 Q: 1

The diameter of a copper wire is thought to be approximately 0.3 mm.

Which instrument should be used to obtain a more accurate measurement of the diameter of the wire?

A measuring tape

B metre rule

C micrometer

D ruler

---

31. 0625_p16_qp_20 Q: 2

Which measurement can be made using a micrometer screw gauge?

A the air pressure of a tyre

B the diameter of a wire

C the turning effect of a spanner

D the wavelength of microwaves

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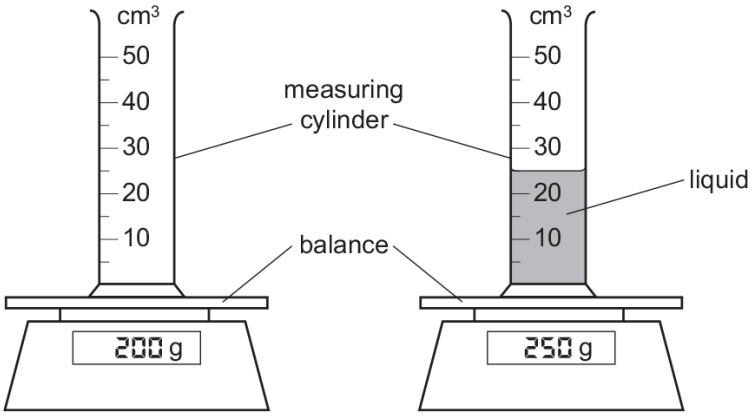
32. 0625_p16_qp_20 Q: 5

The diagram shows an experiment to find the density of a liquid.



What is the density of the liquid?

A $0.5\,g/cm^3$ **B** $2.0\,g/cm^3$ **C** $8.0\,g/cm^3$ **D** $10.0\,g/cm^3$

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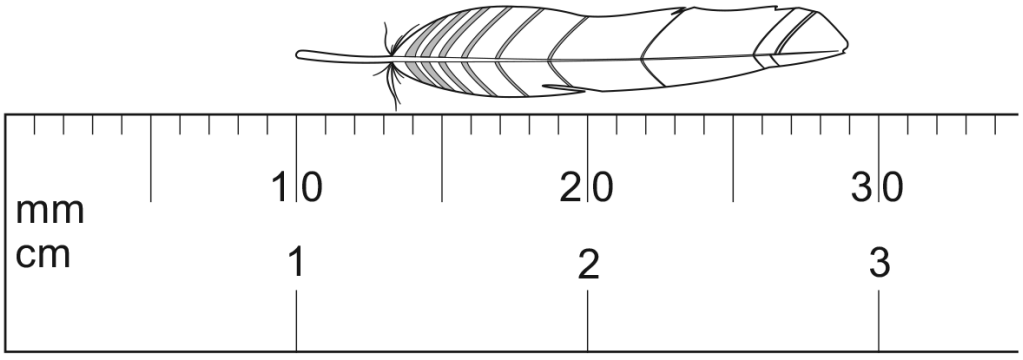
33. 0625_s16_qp_21 Q: 1

The diagram shows an enlarged drawing of the end of a metre rule. It is being used to measure the length of a small feather.



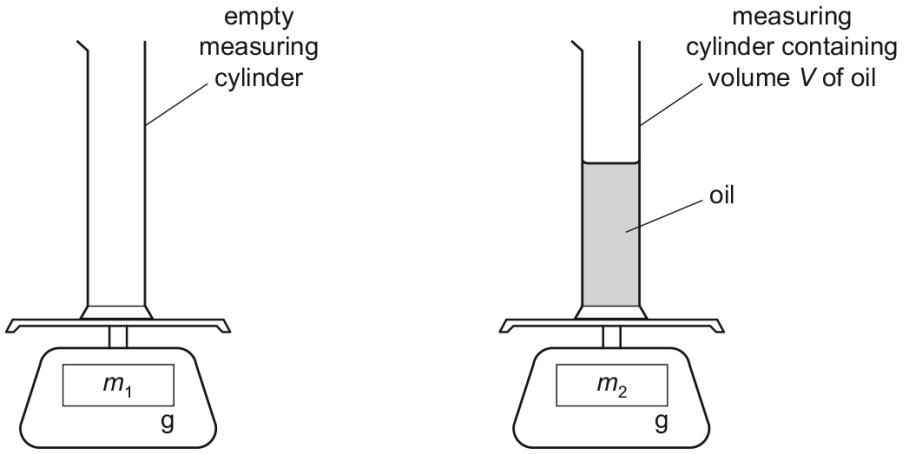
What is the length of the feather?

A 19 mm **B** 29 mm **C** 19 cm **D** 29 cm

---

34. 0625_w16_qp_22 Q: 5

A student uses a measuring cylinder and a balance to find the density of oil. The diagram shows the arrangement used.



Which calculation gives the density of the oil?

A $\frac{V}{m_2}$ **B** $\frac{V}{(m_2 - m_1)}$ **C** $\frac{m_2}{V}$ **D** $\frac{(m_2 - m_1)}{V}$

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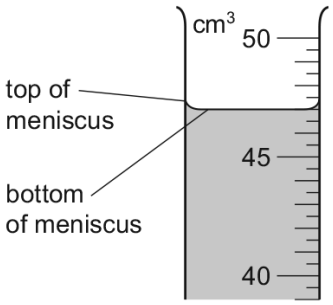
35. 0625_m15_qp_12 Q: 1

A student uses a measuring cylinder to measure the volume of some water. The diagram shows part of the measuring cylinder. The top and bottom of the meniscus are labelled.



What is the volume of the water?

A 47.0 cm^3 **B** 47.5 cm^3 **C** 49.0 cm^3 **D** 49.5 cm^3

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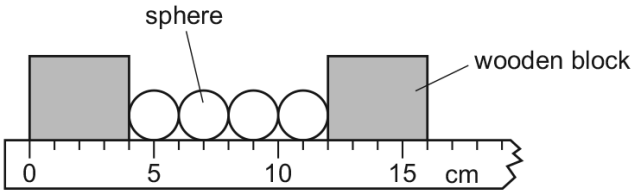
36. 0625_s15_qp_12 Q: 1

The diagram shows four identical spheres placed between two wooden blocks on a ruler.



What is the diameter of one sphere?

A 1.0 cm **B** 2.0 cm **C** 3.0 cm **D** 4.0 cm

---

37. 0625_s15_qp_13 Q: 1

A cook wants to prepare some food to be cooked by 1.15 p.m. He uses an oven with an automatic timer that can be set to switch on and off at certain times. The oven needs to be switched on for 2 hours 10 minutes.

At which time does the oven need to switch on?

A 11.05 a.m. **B** 11.25 a.m. **C** 3.05 p.m. **D** 3.25 p.m.

---

38. 0625_w15_qp_11 Q: 1

Which option contains **only** apparatus that could be used to determine the volume of a small block of unknown material?

A measuring cylinder, metre rule

B measuring cylinder, stopwatch

C metre rule, balance

D metre rule, stopwatch

---

39. 0625_w15_qp_13 Q: 1

A student uses a measuring cylinder to measure the volume of a quantity of water.

Which action would make her result **less** accurate?

A making sure her eye is level with the water surface

B making sure the cylinder is vertical

C reading the bottom of the meniscus

D using the largest measuring cylinder possible

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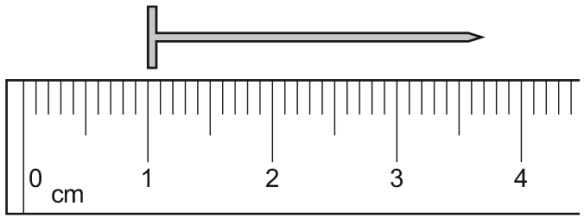
40. 0625_s14_qp_12 Q: 1

The diagram shows part of a ruler. The ruler is used to find the length of a nail.



What is the length of the nail?

A 2.2 cm **B** 2.7 cm **C** 3.2 cm **D** 3.7 cm

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41. 0625_s14_qp_13 Q: 1

Which instrument is used to compare the masses of objects?

A a balance

B a barometer

C a manometer

D a measuring cylinder

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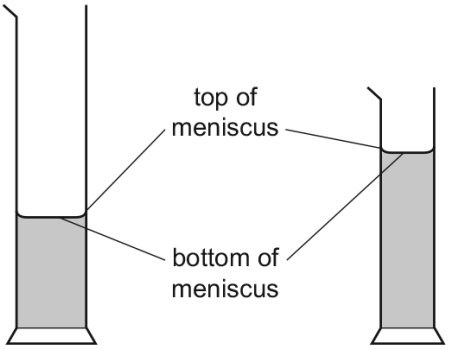
42. 0625_s14_qp_13 Q: 4

A student wishes to measure accurately the volume of approximately 40 cm^3 of water. She has two measuring cylinders, a larger one that can hold 100 cm^3, and a smaller one that can hold 50 cm^3. The water forms a meniscus where it touches the glass.



Which cylinder should the student use and which water level should she use to ensure an accurate result?

	cylinder	water level
A	larger one	bottom of meniscus
B	larger one	top of meniscus
C	smaller one	bottom of meniscus
D	smaller one	top of meniscus

---

43. 0625_w14_qp_13 Q: 1

A stopwatch is used to time a runner in a race. The diagrams show the stopwatch at the start and at the end of a lap of the race.

start of lap

end of lap

How long did the runner take to finish the lap of the race?

A 50.00 seconds

B 50.10 seconds

C 90.00 seconds

D 100.10 seconds

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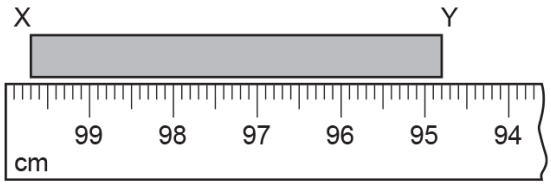
44. 0625_s13_qp_12 Q: 1

A student measures the length of a rod XY by holding it next to a metre rule.



The student writes down the length as 94.8 cm.

Which statement is correct?

A The value is correct.

B The value is incorrect because it should be 95.2 cm.

C The value is incorrect because it should be in millimetres.

D The value is incorrect because the student should subtract the reading for end Y from the reading for end X.

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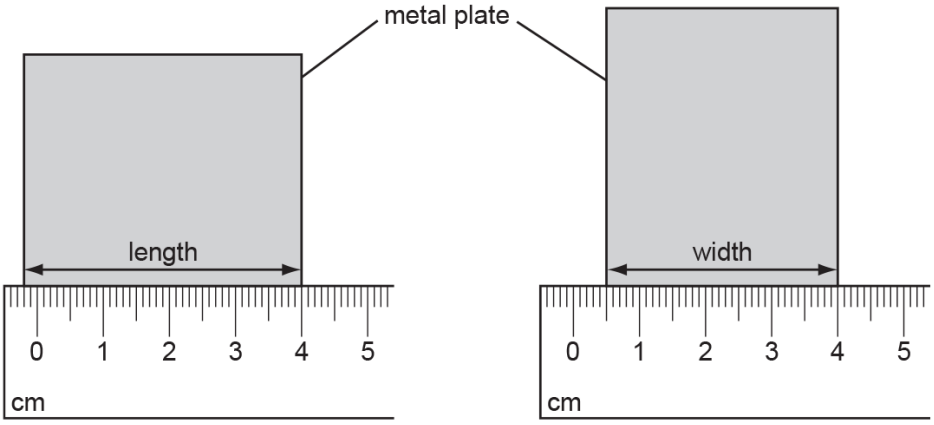
45. 0625_w13_qp_11 Q: 1

A student uses a ruler to measure the length and the width of a small rectangular metal plate.



What is the area of the plate?

A 14.0 cm^2 **B** 14.7 cm^2 **C** 16.0 cm^2 **D** 16.8 cm^2

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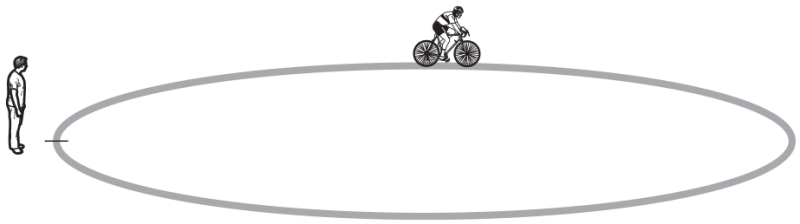
46. 0625_w13_qp_13 Q: 1

A cyclist rides round a track three times.



Her friend uses a stopwatch to record the time at the start of the ride, after one circuit, and at the end of the three circuits. The readings from the stopwatch are shown.

What is the average time for one circuit of the track?

A 174 s **B** 180 s **C** 198 s **D** 200 s

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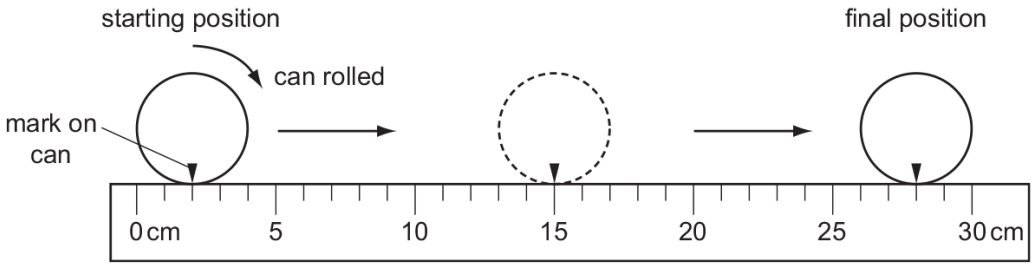
47. 0625_s12_qp_11 Q: 1

A cylindrical can is rolled along the ruler shown in the diagram.



The can rolls over twice.

What is the circumference (distance all round) of the can?

A 13 cm **B** 14 cm **C** 26 cm **D** 28 cm

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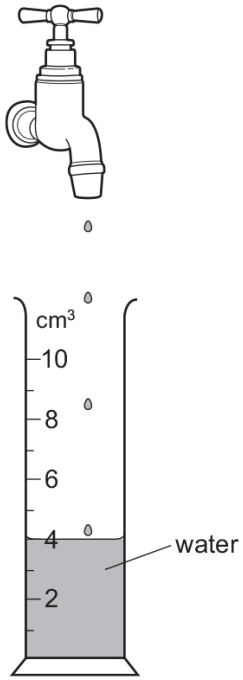
48. 0625_s12_qp_12 Q: 2

Drops of water are dripping steadily from a tap (faucet). The diagram shows a measuring cylinder which has collected 120 drops of water.



How many drops in total will have been collected when the measuring cylinder reads 10 cm^3?

A 48 **B** 60 **C** 180 **D** 300

---

49. 0625_w12_qp_13 Q: 1

A pendulum is set in motion and timed. The time measured for 20 complete swings is 30 s.

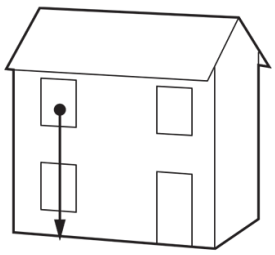
What is the time for one complete swing of the pendulum?

A 0.67 s **B** 0.75 s **C** 1.5 s **D** 3.0 s

1.2 Motion

50. 0625_m22_qp_22 Q: 2

A tennis ball falls from the upstairs window of a house.



What can be said about the acceleration of the ball if air resistance is ignored?

A It depends on the density of the ball.

B It depends on the mass of the ball.

C It increases as the ball falls.

D It stays the same as the ball falls.

---

51. 0625_m22_qp_22 Q: 3

A car joins a road at a speed of 14 m/s and accelerates at 4.0 m/s^2 for 5.0 seconds.

What is the final speed of the car?

A 18 m/s **B** 20 m/s **C** 32 m/s **D** 34 m/s

---

52. 0625_m21_qp_22 Q: 2

A ball hits a bat with a velocity of 30 m/s, and leaves the bat travelling with a velocity of 20 m/s in the opposite direction. The ball is in contact with the bat for 0.10 s.

What is the magnitude of the acceleration of the ball whilst it is in contact with the bat?

A 1.0 m/s^2 **B** 5.0 m/s^2 **C** 100 m/s^2 **D** 500 m/s^2

---

53. 0625_m21_qp_22 Q: 3

A train begins a journey from a station and travels 60 km in a time of 20 minutes.

What is the average speed of the train?

A 3.0 m/s **B** 5.0 m/s **C** 50 m/s **D** 60 m/s

---

54. 0625_s21_qp_21 Q: 2

Which row describes speed and velocity?

	speed	velocity
A	scalar	scalar
B	scalar	vector
C	vector	scalar
D	vector	vector

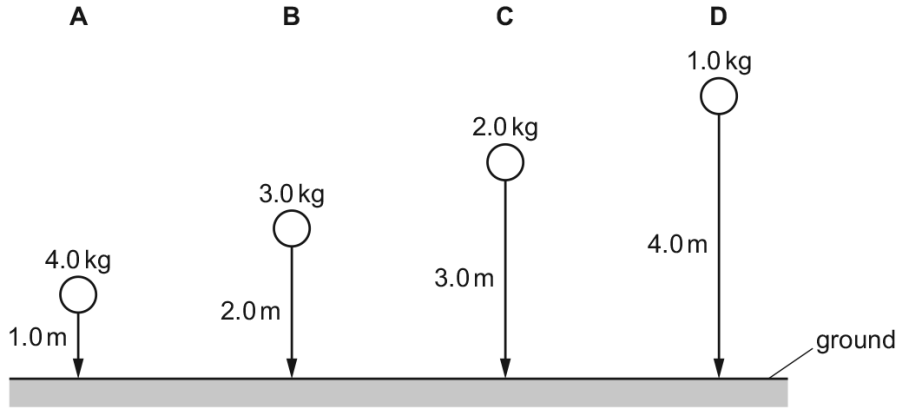
---

55. 0625_s21_qp_21 Q: 3

Four balls with different masses are dropped from the heights shown.

Air resistance may be ignored.

Which ball has the smallest average speed?

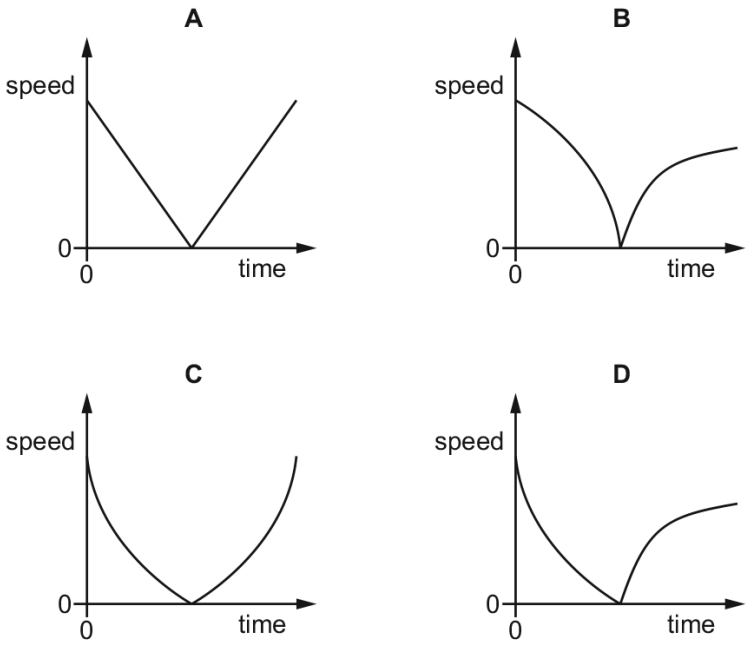


---

56. 0625_s21_qp_22 Q: 3

A ball is thrown vertically upwards through the air. Air resistance acts on the ball.

Which graph shows how its speed varies with time?



---

57. 0625_s21_qp_23 Q: 3

A cyclist rides 300 m up a slope in 50 s.

She then rides down the slope in 25 s.

What is her average speed for the whole journey?

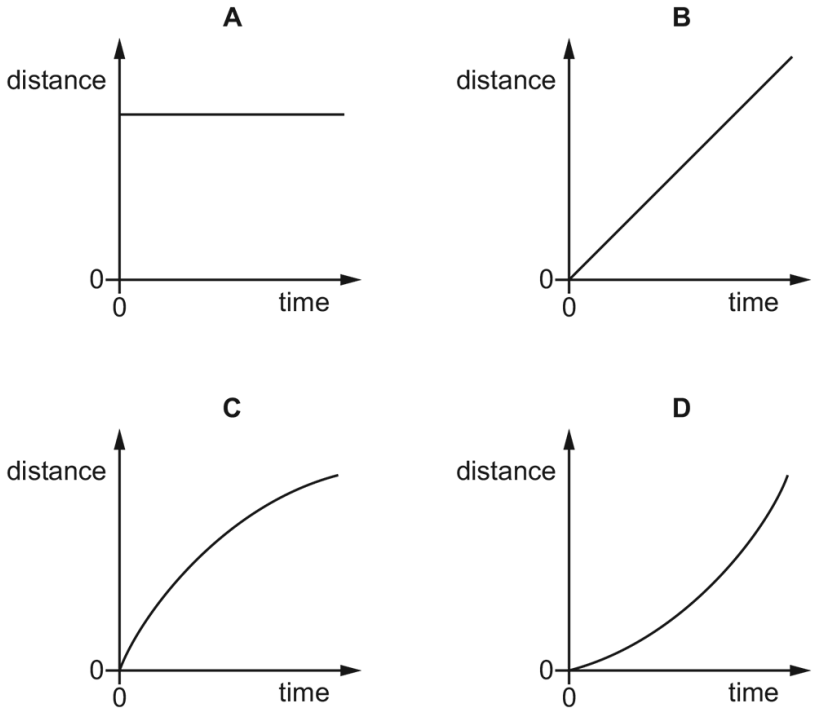
A 4.0 m/s **B** 8.0 m/s **C** 9.0 m/s **D** 16 m/s

---

58. 0625_w21_qp_21 Q: 2

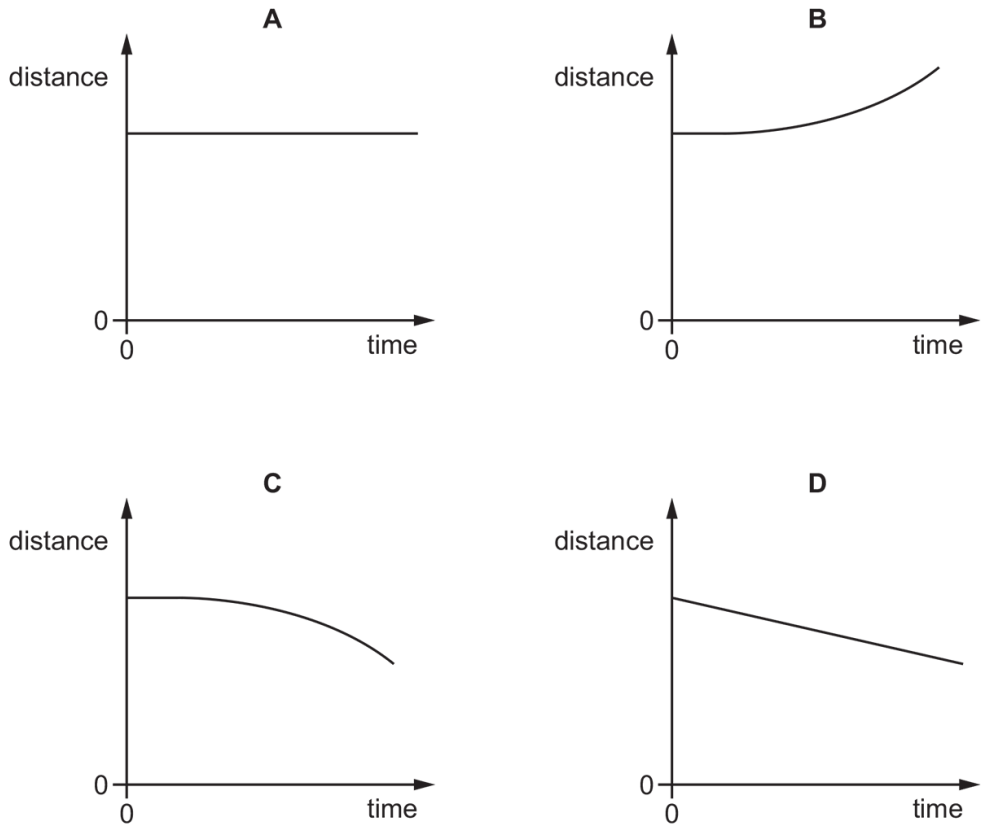
The diagrams show distance–time graphs for four objects.

Which graph represents an object moving with an increasing speed?



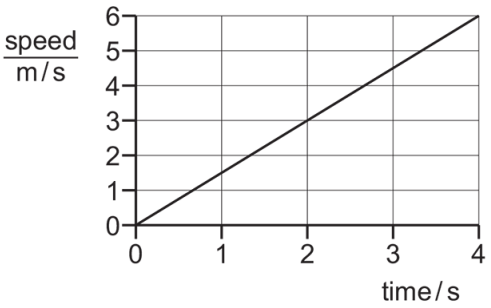
59. 0625_w21_qp_22 Q: 2

Which graph represents an object that is moving at constant speed?



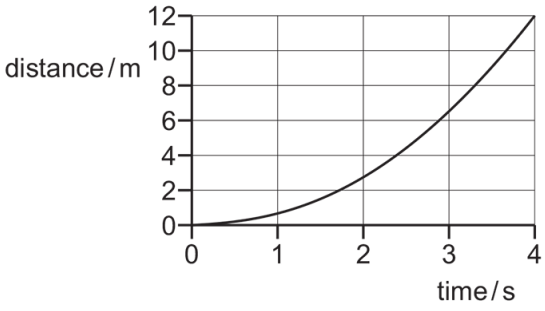
60. 0625_w21_qp_23 Q: 2

The graph shows how the speed of a car varies with time at the start of a journey.

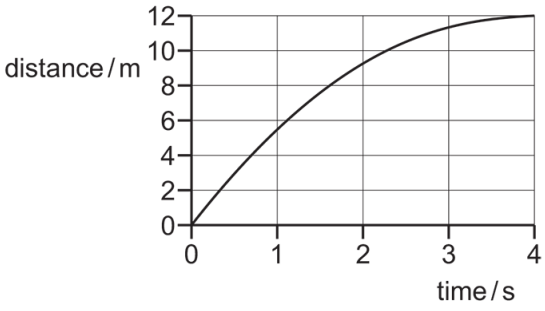


Which distance–time graph represents the motion of the car over the same time period?

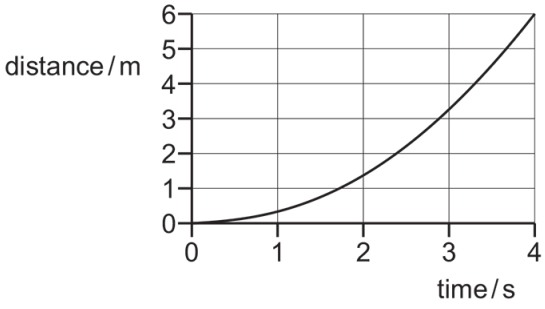
A



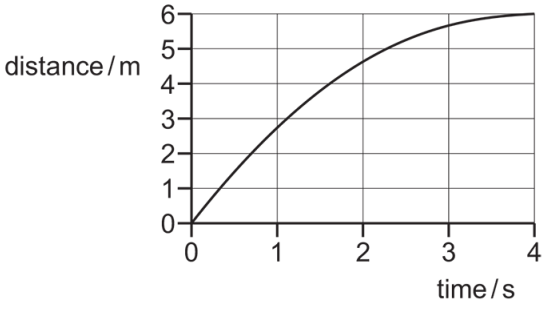
B



C

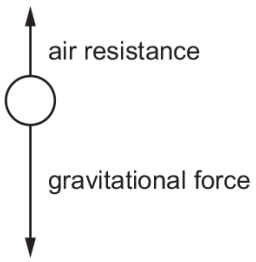


D



61. 0625_m20_qp_22 Q: 2

A ball falls from rest through the air towards the ground. The diagram shows two forces acting on the ball.



As the ball falls, the air resistance increases.

Which statement is correct?

A The acceleration of the ball decreases.

B The acceleration of the ball increases.

C The speed of the ball decreases.

D The gravitational force on the ball decreases.

---

62. 0625_m20_qp_22 Q: 3

A compressed spring projects a ball horizontally in a vacuum chamber.

On the Earth, the ball reaches the chamber floor 4.0 m in front of the spring.

An identical experiment is done on the Moon. The gravitational field strength is lower on the Moon than on the Earth.

The experimental results on the Moon are compared with those on the Earth.

Which statement is correct?

A The horizontal speed is greater on the Moon and the ball hits the floor 4.0 m in front of the spring.

B The horizontal speed is greater on the Moon and the ball hits the floor more than 4.0 m in front of the spring.

C The horizontal speed is the same on the Moon and the ball hits the floor 4.0 m in front of the spring.

D The horizontal speed is the same on the Moon and the ball hits the floor more than 4.0 m in front of the spring.

---

63. 0625_p20_qp_20 Q: 3

A parachutist is falling at terminal velocity, without her parachute open.

She now opens her parachute.

What is the direction of her motion, and what is the direction of her acceleration, immediately after she opens her parachute?

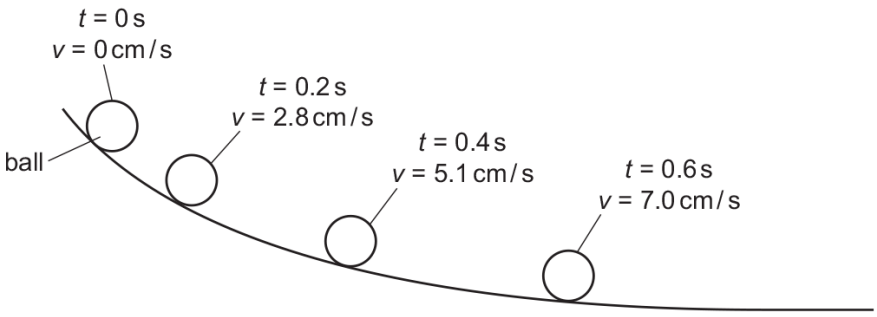
	direction of motion of the parachutist	direction of acceleration of the parachutist
A	downwards	downwards
B	downwards	upwards
C	upwards	downwards
D	upwards	upwards

---

64. 0625_s20_qp_21 Q: 2

A student investigates the motion of a ball rolling down a slope.

The diagram shows the speed v of the ball at different times t.



Which statement describes the motion of the ball?

A The acceleration is not constant.

B The acceleration is negative.

C The speed is decreasing.

D The velocity is constant.

---

65. 0625_s20_qp_21 Q: 3

Which statement about acceleration is correct?

A It is related to the changing speed of an object.

B It is the distance an object travels in one second.

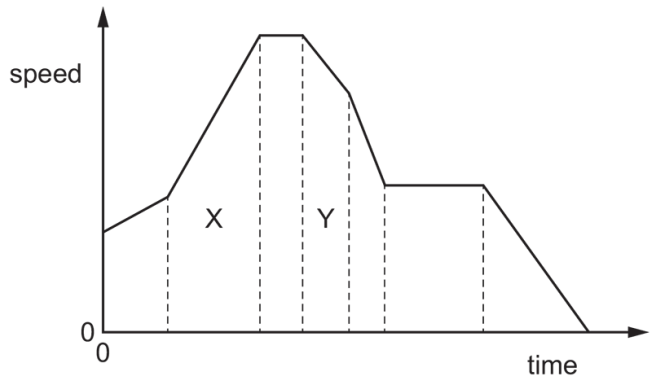
C It is the force acting on an object divided by the distance it travels in one second.

D It is the force acting on an object when it is near to the Earth.

---

66. 0625_w20_qp_21 Q: 2

The speed–time graph represents a journey.



How does the graph show that the distance travelled in section X of the journey is greater than the distance travelled in section Y?

A The area below section X of the graph is greater than the area below section Y.

B The gradient of section X of the graph is greater than the gradient of section Y.

C The speed at the end of section X of the journey is greater than the speed at the end of section Y.

D The time for section X of the journey is greater than the time for section Y.

---

67. 0625_w20_qp_21 Q: 3

A car is travelling at a velocity of 2.0 m/s. It accelerates at a constant 0.20 m/s^2 for 2.5 minutes.

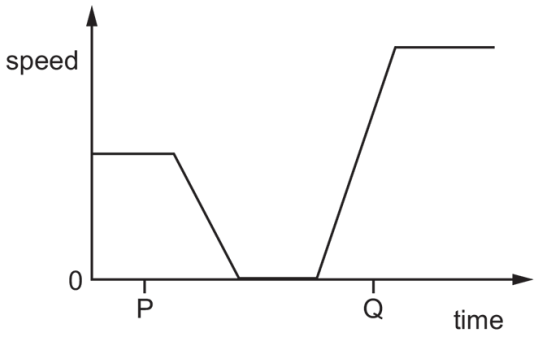
What is the final velocity of the car?

A 2.5 m/s **B** 5.2 m/s **C** 30 m/s **D** 32 m/s

---

68. 0625_w20_qp_22 Q: 2

The graph shows how the speed of an object varies with time.



Which row describes the motion of the object at times P and Q?

	P	Q
A	at rest	accelerating
B	at rest	decelerating
C	moving with constant speed	accelerating
D	moving with constant speed	decelerating

---

69. 0625_w20_qp_23 Q: 2

Object P moves at a constant speed of 5 m / s repeatedly backwards and forwards in a straight line.

Object Q moves at a constant speed of 5 m / s vertically downwards.

Object R moves at a constant speed of 5 m / s in a circle.

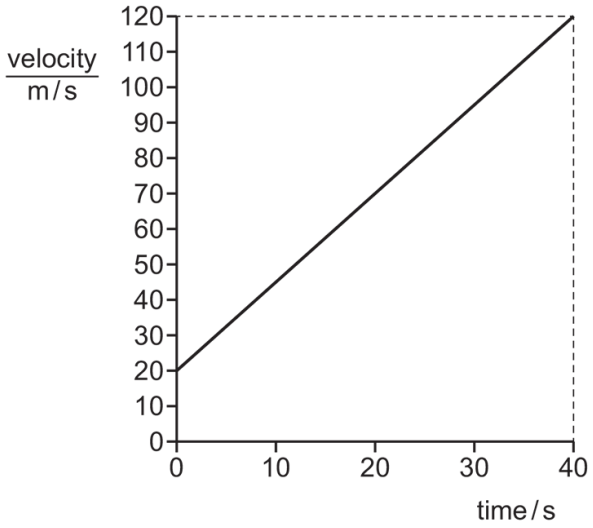
Which objects are moving with uniform velocity?

A P only **B** Q only **C** R only **D** Q and R

---

70. 0625_w20_qp_23 Q: 3

The diagram shows a velocity–time graph for an object which is accelerating.



What is the acceleration of the object?

A $0.40\,m/s^2$ **B** $2.5\,m/s^2$ **C** $3.0\,m/s^2$ **D** $100\,m/s^2$

---

71. 0625_m19_qp_22 Q: 2

An object is moving with uniform deceleration.

Which statement describes its motion?

A Its rate of change of speed is decreasing.

B Its speed is constant.

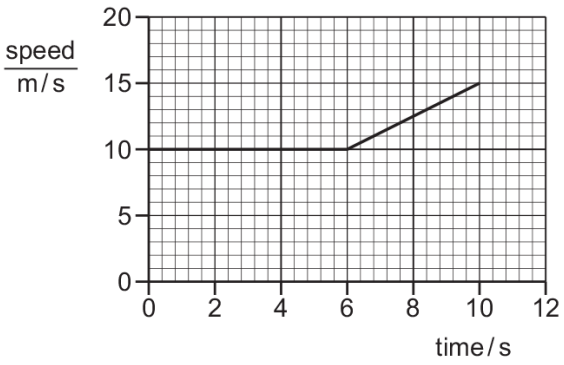
C Its speed is decreasing.

D Its speed is increasing.

---

72. 0625_m19_qp_22 Q: 3

The graph shows how the speed of a car varies during part of its journey.



What is the value of the car's acceleration between 6 s and 10 s?

A 0.50 m/s^2 **B** 0.80 m/s^2 **C** 1.25 m/s^2 **D** 1.50 m/s^2

---

73. 0625_s19_qp_21 Q: 2

The velocity of an object increases from 30 m/s to 50 m/s in 5.0 seconds.

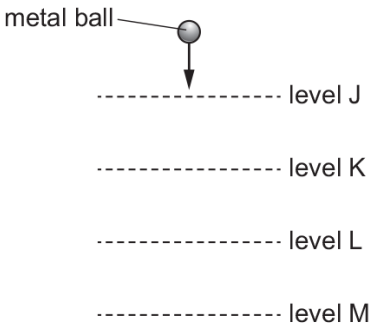
What is the average acceleration of the object?

A 0.10 m/s^2 **B** 0.25 m/s^2 **C** 4.0 m/s^2 **D** 10 m/s^2

---

74. 0625_s19_qp_21 Q: 3

A heavy metal ball falls vertically downwards through air past four equally spaced levels J, K, L and M.



The times taken to fall from one level to the next are measured.

Where is the speed of the ball greatest and which time is shortest?

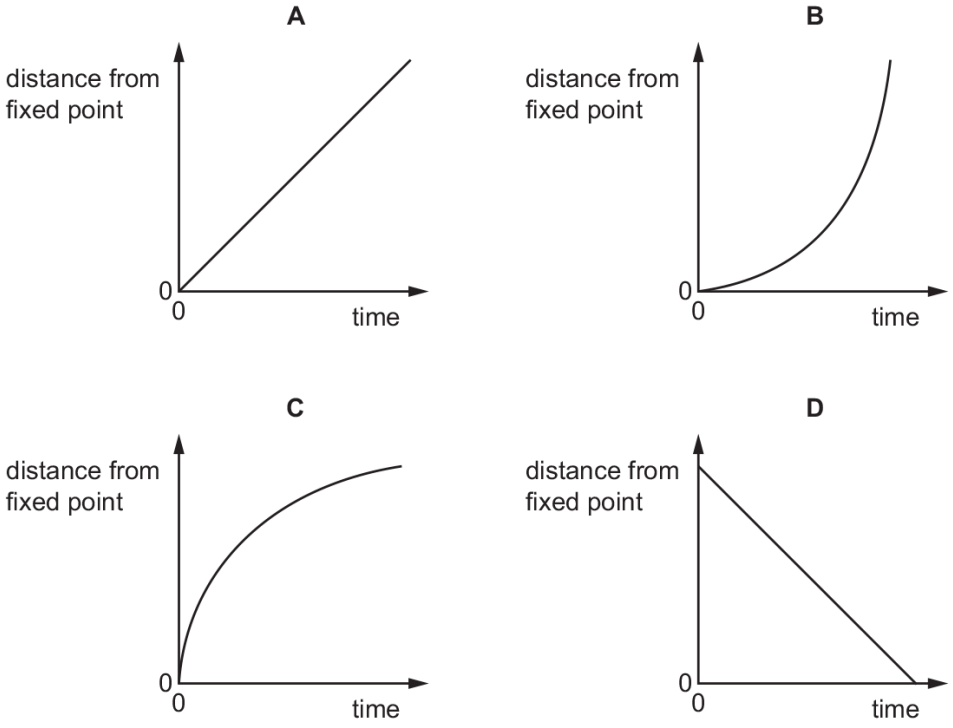
	speed is greatest between	time is shortest between
A	J and K	J and K
B	J and K	L and M
C	L and M	J and K
D	L and M	L and M

75. 0625_s19_qp_22 Q: 2

Four objects are moving along a straight line.

The distance of an object from a fixed point on the line is plotted against time for each object.

Which object is decelerating?



---

76. 0625_s19_qp_23 Q: 2

A brass ball and a feather are released at the same time.

On Earth, the ball reaches the ground first.

On the Moon, they reach the ground at the same time.

What is the explanation for this?

A Both weigh the same on the Moon.

B Both weigh less on the Moon.

C There is a greater air resistance on the Moon.

D There is no air resistance on the Moon.

---

77. 0625_w19_qp_21 Q: 2

A light object is dropped from rest. It falls a large distance vertically through air.

How can the motion of the object be described?

A constant acceleration

B increasing acceleration

C decreasing acceleration and then moving at terminal velocity

D increasing acceleration and then moving at terminal velocity

---

78. 0625_w19_qp_21 Q: 3

A car travels at an average speed of 60 km / h for 15 minutes.

How far does the car travel in 15 minutes?

A 4.0 km **B** 15 km **C** 240 km **D** 900 km

---

79. 0625_w19_qp_22 Q: 3

A car travels at an average speed of 60 km / h for 15 minutes.

How far does the car travel in 15 minutes?

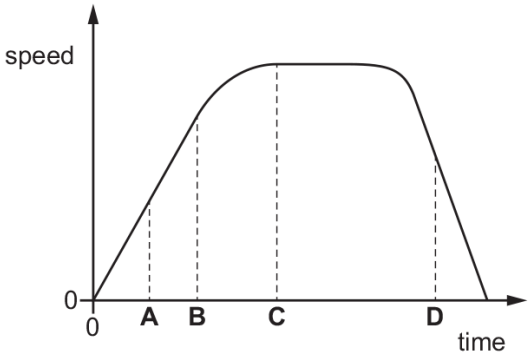
A 4.0 km **B** 15 km **C** 240 km **D** 900 km

---

80. 0625_w19_qp_23 Q: 2

The graph shows how the speed of an object varies with time.

At which labelled time is the object decelerating?



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81. 0625_m18_qp_22 Q: 2

A parachutist is falling through the air at terminal velocity.

Which statement about the parachutist is correct?

A Every force acting on the parachutist is equal to zero and his acceleration is equal to zero.

B Every force acting on the parachutist is equal to zero and his velocity is equal to zero.

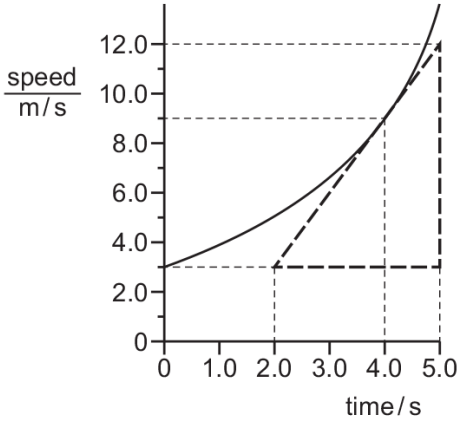
C The resultant force acting on the parachutist is equal to zero and his acceleration is equal to zero.

D The resultant force acting on the parachutist is equal to zero and his velocity is equal to zero.

---

82. 0625_m18_qp_22 Q: 3

The curved line on the graph shows the motion of a car.



What is the acceleration of the car at the time of 4.0 s?

A $0.33\,m/s^2$ **B** $0.44\,m/s^2$ **C** $2.3\,m/s^2$ **D** $3.0\,m/s^2$

---

83. 0625_s18_qp_21 Q: 2

When does an object falling vertically through the air reach terminal velocity?

A when the acceleration of the object becomes negative

B when the acceleration of the object is equal to *g*

C when the air resistance equals the weight of the object

D when the air resistance is greater than the weight of the object

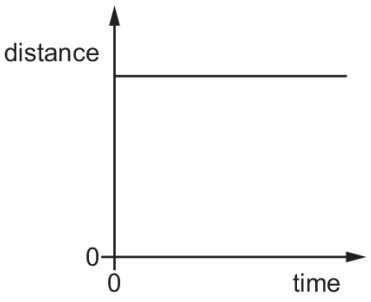
---

84. 0625_s18_qp_21 Q: 3

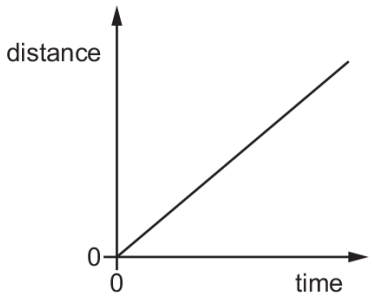
A car is moving along a straight, level road, with a constant acceleration.

Which graph shows the motion of the car?

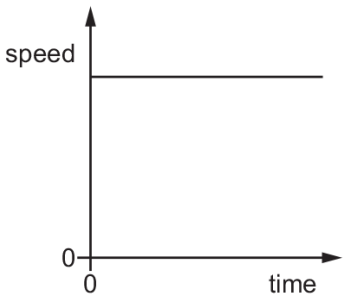
A



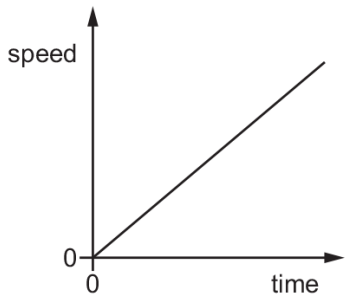
B



C



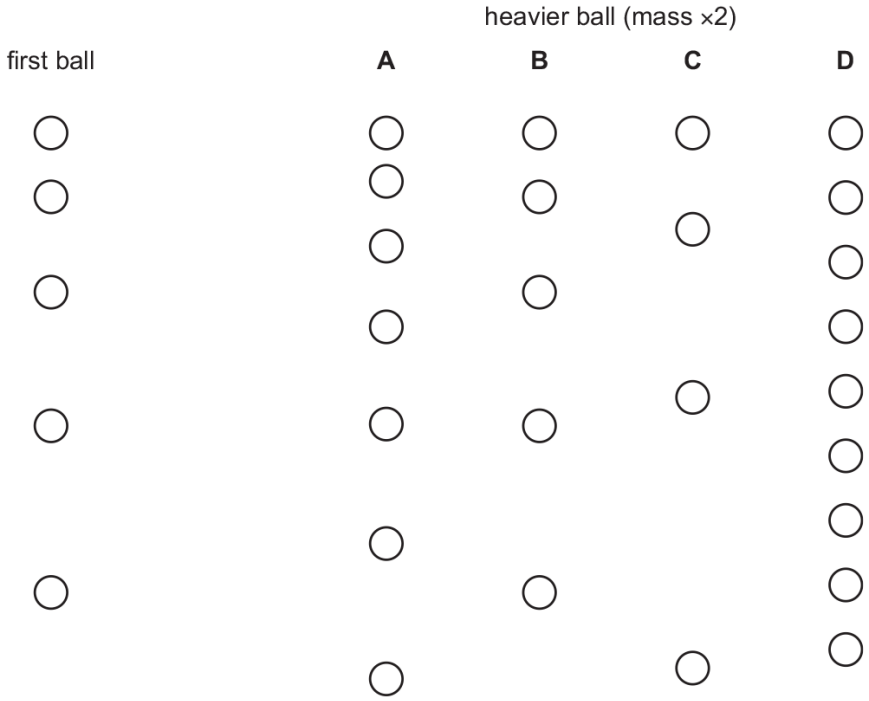
D



85. 0625_s18_qp_22 Q: 3

A ball is dropped in an evacuated tube. A series of photographs is taken at equal time intervals from the time of release. Another ball of the same size but twice the mass is also dropped in the same evacuated tube and photographed.

Which diagram shows the motion of the heavier ball?



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86. 0625_s18_qp_23 Q: 3

A sprinter runs a 100 m race in a straight line. The table shows how his speed changes with time for the first 5.0 s of the race.

$\frac{\text{speed}}{\text{m/s}}$	0	1.7	4.1	5.7	6.5	6.8
time/s	0	1.0	2.0	3.0	4.0	5.0

What is the average acceleration of the sprinter between time 2.0 s and time 3.0 s?

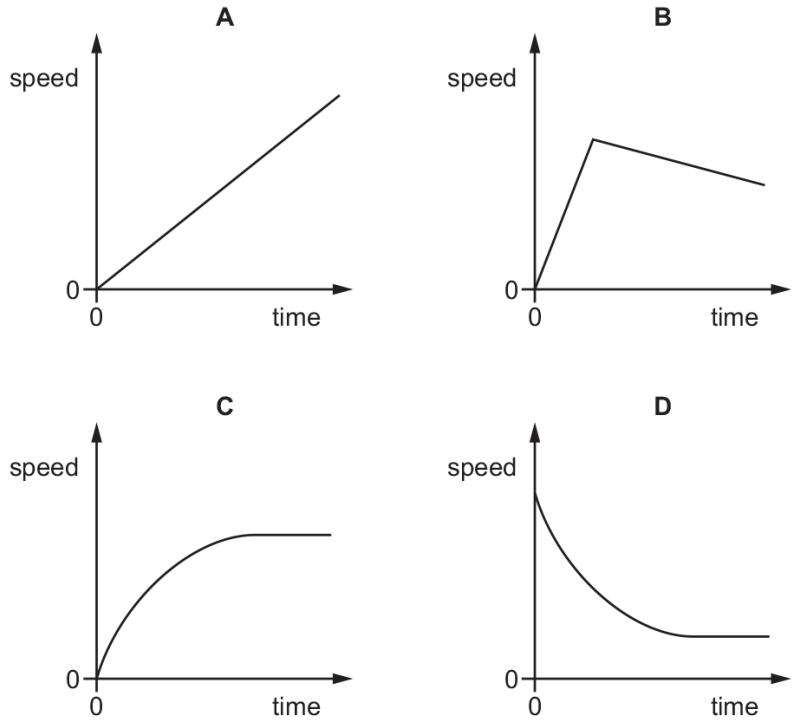
A $1.6\,m/s^2$ **B** $1.9\,m/s^2$ **C** $4.1\,m/s^2$ **D** $5.7\,m/s^2$

---

87. 0625_w18_qp_21 Q: 2

A small, light ball is dropped from the top of a tall building.

Which graph shows how the speed of the ball changes with time?



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88. 0625_w18_qp_21 Q: 3

A runner runs 300 m at an average speed of 3.0 m/s. She then runs another 300 m at an average speed of 6.0 m/s.

What is her average speed for the total distance of 600 m?

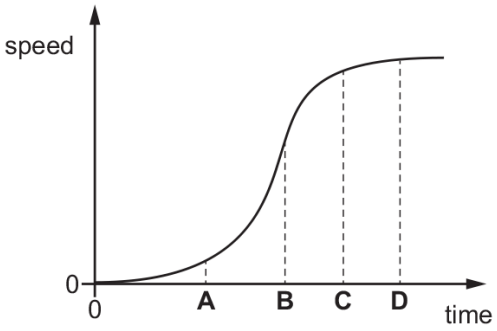
A 2.0 m/s **B** 4.0 m/s **C** 4.5 m/s **D** 8.0 m/s

---

89. 0625_w18_qp_22 Q: 2

The speed-time graph shows the motion of a car.

At which time is its acceleration greatest?



---

90. 0625_w18_qp_22 Q: 3

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 $\frac{(8\times10)+(6\times12)}{22}$

C $\frac{(8\div10)+(6\div12)}{22}$

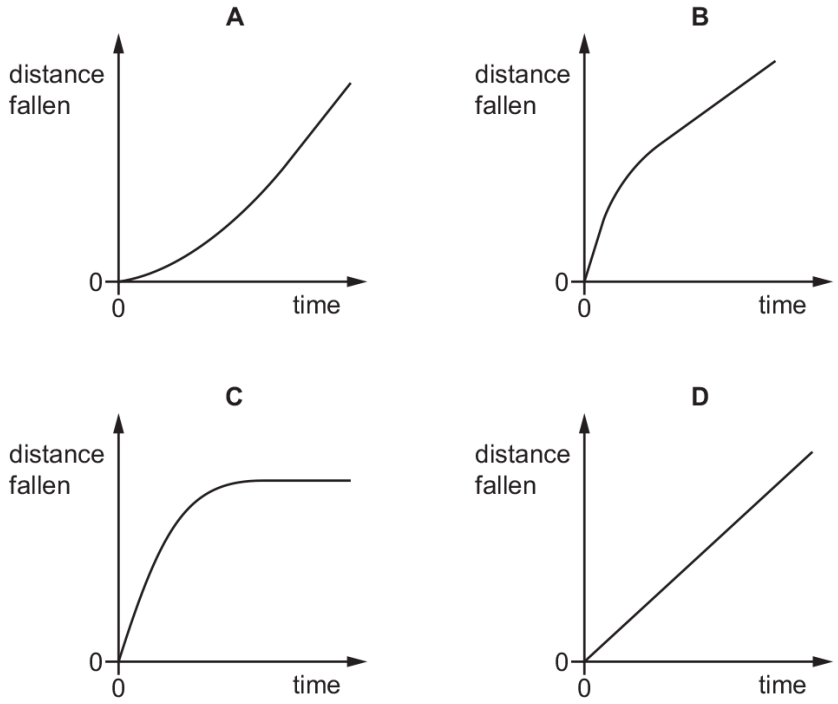
D $\frac{(10\div8)+(12\div6)}{22}$

---

91. 0625_w18_qp_23 Q: 2

An object falls in a gravitational field with air resistance.

Which distance-time graph shows this motion?



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92. 0625_w18_qp_23 Q: 3

A boy runs 400 m at an average speed of 4.0 m/s.

He runs the first 200 m in 40 s.

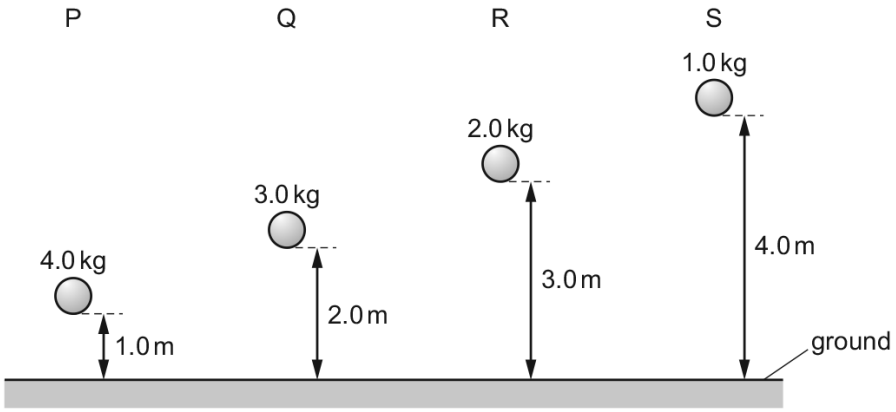
How long does he take to run the second 200 m?

A 60 s **B** 66.7 s **C** 80 s **D** 140 s

---

93. 0625_m17_qp_22 Q: 2

Four balls with different masses are dropped from the heights shown.



Air resistance may be ignored.

Which statement about the balls is correct?

A Ball P has the greatest acceleration.

B Balls Q and R take the same time to fall to the ground.

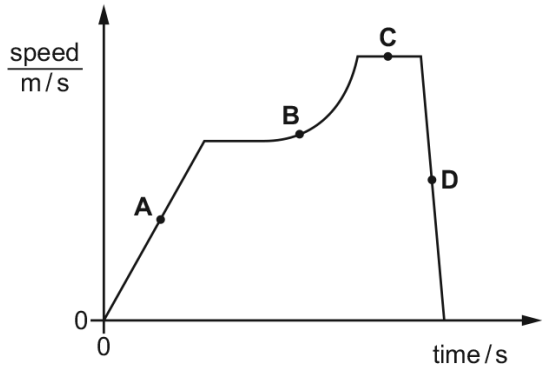
C The acceleration of ball R is half the acceleration of ball P.

D Ball S has the greatest average speed.

94. 0625_m17_qp_22 Q: 3

An object is travelling in a straight line. The diagram is the speed-time graph for the object.

At which labelled point is the object accelerating at a changing rate?



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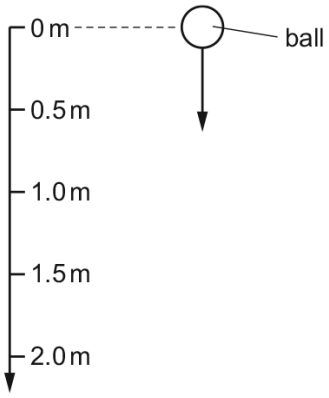
95. 0625_s17_qp_21 Q: 2

On Earth, a ball is dropped and falls 2.0 m in a vacuum.

The acceleration of the ball at 1.0 m is 10 m/s^2.



What is the acceleration of the ball at 0.5 m?

A 5.0 m/s^2 **B** 10 m/s^2 **C** 15 m/s^2 **D** 20 m/s^2

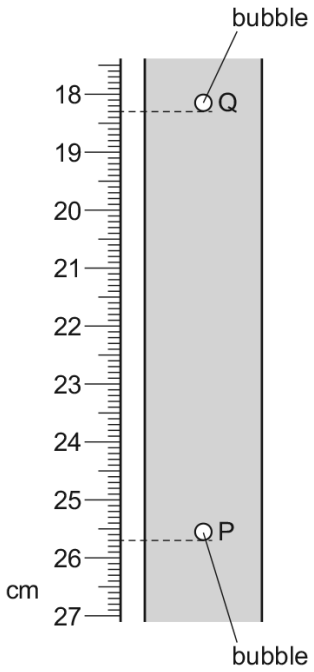
---

96. 0625_s17_qp_22 Q: 2

A student determines the average speed of a bubble rising through a liquid at constant speed.

When the student starts the stopwatch the bubble is at position P.

After 2.0 s the bubble is at position Q.

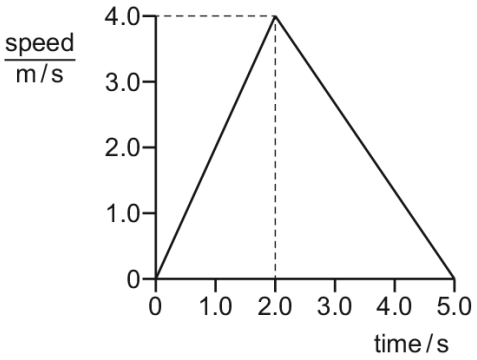


What is the speed of the bubble between P and Q?

A 3.2 cm/s **B** 3.7 cm/s **C** 6.4 cm/s **D** 7.4 cm/s

97. 0625_s17_qp_22 Q: 3

The diagram shows the speed-time graph for a toy car travelling in a straight line.



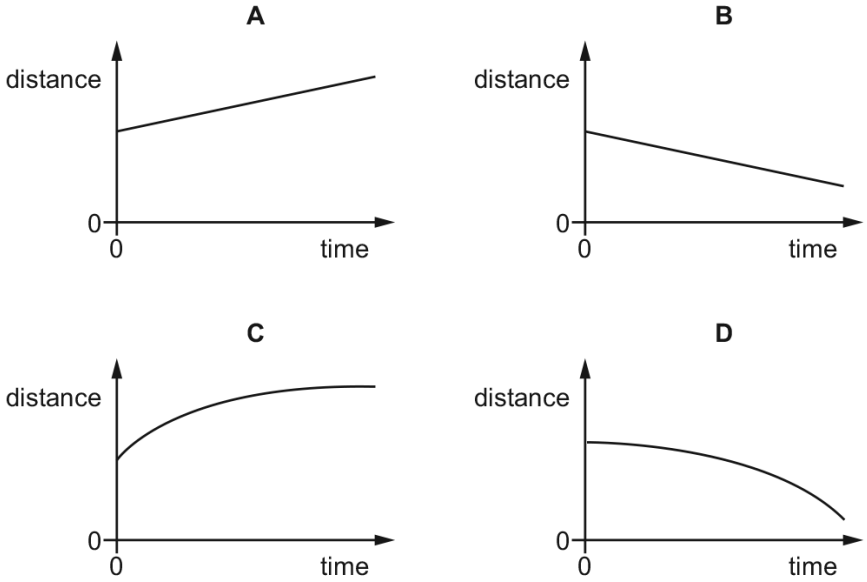
What is the acceleration of the car during the first two seconds and what is the total distance that it travels?

	acceleration m/s^2	total distance/m
A	0.50	10
B	0.50	20
C	2.0	10
D	2.0	20

---

98. 0625_s17_qp_23 Q: 3

Which distance-time graph represents a body whose speed is decreasing?



SN	Paper	Q. No.	Answer
1	0625_m22_qp_22	1	B
2	0625_m21_qp_22	1	B
3	0625_s21_qp_21	1	C
4	0625_s21_qp_22	1	A
5	0625_s21_qp_23	1	C
6	0625_w21_qp_21	1	D
7	0625_w21_qp_22	1	C
8	0625_w21_qp_23	1	B
9	0625_m20_qp_22	1	A
10	0625_p20_qp_20	2	B
11	0625_s20_qp_21	1	B
12	0625_s20_qp_22	1	A
13	0625_s20_qp_23	1	B
14	0625_w20_qp_21	1	C
15	0625_w20_qp_22	1	D
16	0625_w20_qp_23	1	B
17	0625_m19_qp_22	1	D
18	0625_m19_qp_22	5	B
19	0625_s19_qp_22	1	C
20	0625_w19_qp_21	1	C
21	0625_w19_qp_22	1	D
22	0625_w19_qp_23	1	C
23	0625_m18_qp_22	1	D
24	0625_s18_qp_21	1	A
25	0625_w18_qp_21	1	B
26	0625_m17_qp_22	1	B
27	0625_s17_qp_22	1	A
28	0625_s17_qp_23	2	C
29	0625_w17_qp_22	1	B
30	0625_m16_qp_22	1	C
31	0625_p16_qp_20	2	B
32	0625_p16_qp_20	5	B
33	0625_s16_qp_21	1	A
34	0625_w16_qp_22	5	D
35	0625_m15_qp_12	1	A
36	0625_s15_qp_12	1	B
37	0625_s15_qp_13	1	A
38	0625_w15_qp_11	1	A
39	0625_w15_qp_13	1	D
40	0625_s14_qp_12	1	B
41	0625_s14_qp_13	1	A
42	0625_s14_qp_13	4	C
43	0625_w14_qp_13	1	A
44	0625_s13_qp_12	1	D
45	0625_w13_qp_11	1	B
46	0625_w13_qp_13	1	C
47	0625_s12_qp_11	1	A
48	0625_s12_qp_12	2	D
49	0625_w12_qp_13	1	C

SN	Paper	Q. No.	Answer
50	0625_m22_qp_22	2	D
51	0625_m22_qp_22	3	D
52	0625_m21_qp_22	2	D
53	0625_m21_qp_22	3	C
54	0625_s21_qp_21	2	B
55	0625_s21_qp_21	3	A
56	0625_s21_qp_22	3	D
57	0625_s21_qp_23	3	B
58	0625_w21_qp_21	2	D
59	0625_w21_qp_22	2	D
60	0625_w21_qp_23	2	A
61	0625_m20_qp_22	2	A
62	0625_m20_qp_22	3	D
63	0625_p20_qp_20	3	B
64	0625_s20_qp_21	2	A
65	0625_s20_qp_21	3	A
66	0625_w20_qp_21	2	A
67	0625_w20_qp_21	3	D
68	0625_w20_qp_22	2	C
69	0625_w20_qp_23	2	B
70	0625_w20_qp_23	3	B
71	0625_m19_qp_22	2	C
72	0625_m19_qp_22	3	C
73	0625_s19_qp_21	2	C
74	0625_s19_qp_21	3	C
75	0625_s19_qp_22	2	C
76	0625_s19_qp_23	2	D
77	0625_w19_qp_21	2	C
78	0625_w19_qp_21	3	B
79	0625_w19_qp_22	3	B
80	0625_w19_qp_23	2	D
81	0625_m18_qp_22	2	C
82	0625_m18_qp_22	3	D
83	0625_s18_qp_21	2	C
84	0625_s18_qp_21	3	D
85	0625_s18_qp_22	3	B
86	0625_s18_qp_23	3	A
87	0625_w18_qp_21	2	C
88	0625_w18_qp_21	3	B
89	0625_w18_qp_22	2	B
90	0625_w18_qp_22	3	B
91	0625_w18_qp_23	2	A
92	0625_w18_qp_23	3	A
93	0625_m17_qp_22	2	D
94	0625_m17_qp_22	3	B
95	0625_s17_qp_21	2	B
96	0625_s17_qp_22	2	B
97	0625_s17_qp_22	3	C
98	0625_s17_qp_23	3	C