

# 1.1 Length & Time

## Question Paper

<b>Level</b>	IGCSE
<b>Subject</b>	Physics (0625)
<b>Exam Board</b>	Cambridge International Examinations(CIE)
<b>Topic</b>	General Physics
<b>Sub Topic</b>	1.1 Length & Time
<b>Booklet</b>	Question Paper

**Time Allowed:** 20 minutes

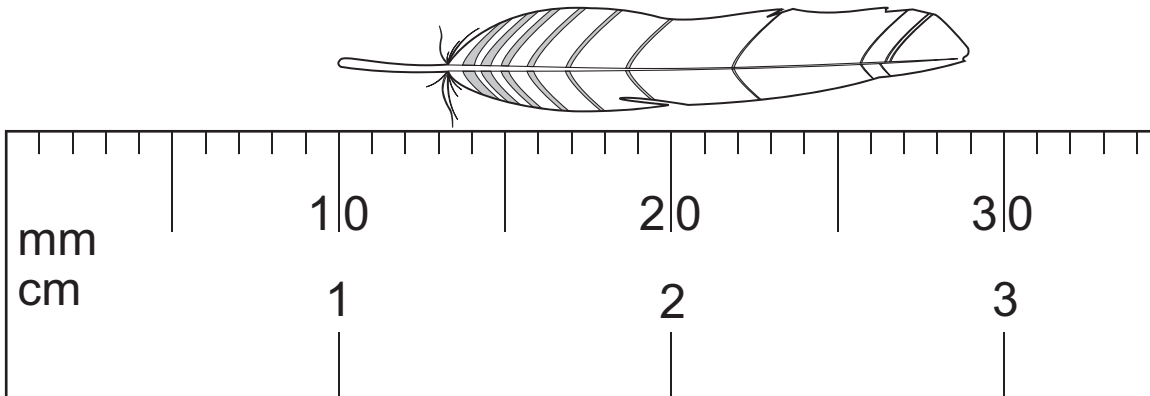
**Score:** /16

**Percentage:** /100

**Grade Boundaries:**

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

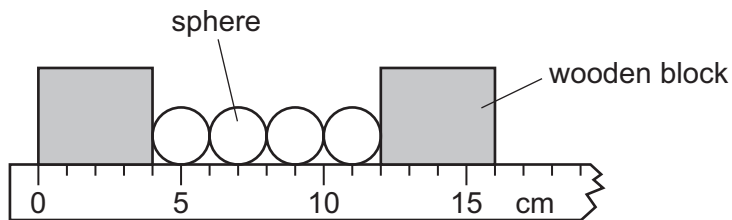
- 1 The diagram shows an enlarged drawing of the end of a metre rule. It is being used to measure the length of a small feather.



What is the length of the feather?

- A** 19 mm      **B** 29 mm      **C** 19 cm      **D** 29 cm
- 2 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
- 3 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

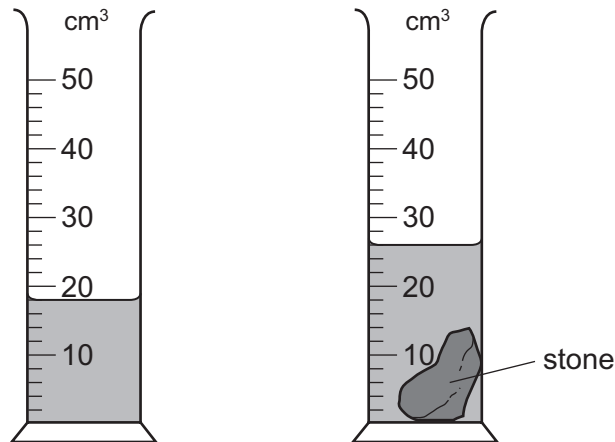
- 4 The diagram shows four identical spheres placed between two wooden blocks on a ruler.



What is the diameter of one sphere?

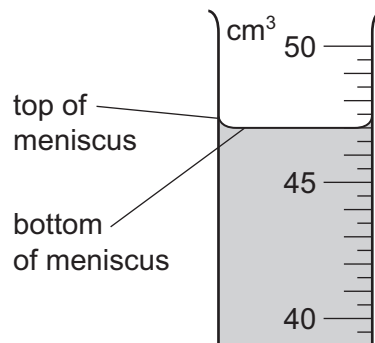
- A** 1.0 cm      **B** 2.0 cm      **C** 3.0 cm      **D** 4.0 cm
- 5 A cook wants to prepare some food to be cooked by 1.15p.m. He uses an oven with an automatic timer that can be set to switch on and off at certain times. The oven needs to be switched on for 2 hours 10 minutes.
- At which time does 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.
- 6 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

- 7 The diagram shows a measuring cylinder used to measure the volume of a small stone.



What is the volume of the stone?

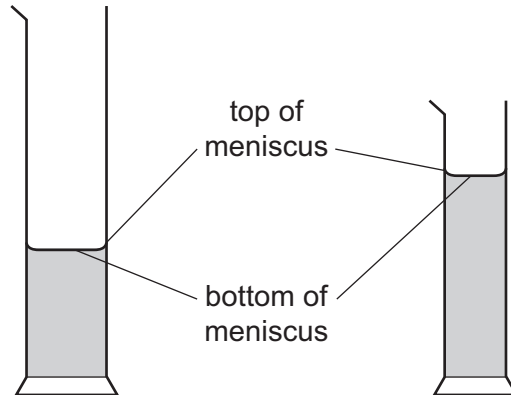
- A** 8 cm<sup>3</sup>      **B** 9 cm<sup>3</sup>      **C** 14 cm<sup>3</sup>      **D** 26 cm<sup>3</sup>
- 8 A student uses a measuring cylinder to measure the volume of a quantity of water.
- Which action would make her result **less** accurate?
- A** making sure her eye is level with the water surface
- B** making sure the cylinder is vertical
- C** reading the bottom of the meniscus
- D** using the largest measuring cylinder possible
- 9 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<sup>3</sup>      **B** 47.5 cm<sup>3</sup>      **C** 49.0 cm<sup>3</sup>      **D** 49.5 cm<sup>3</sup>

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

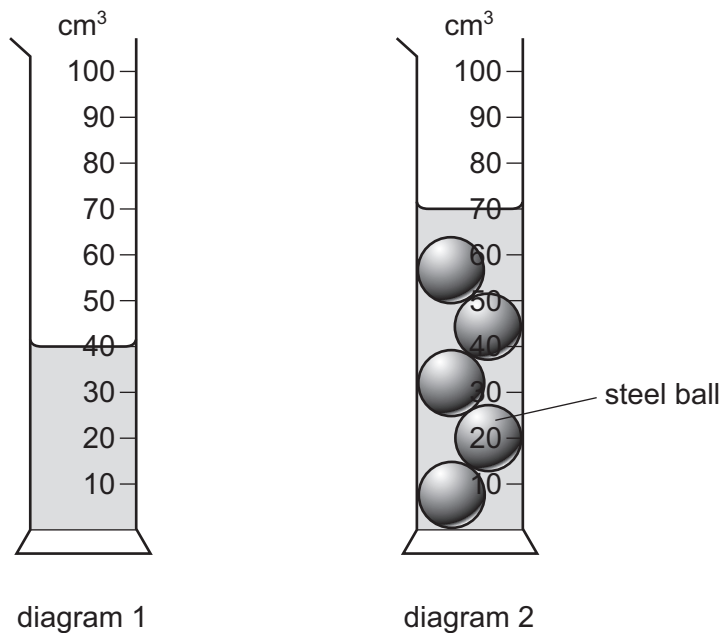


Which cylinder should the student use and which water level should she use to ensure an accurate result?

	cylinder	water level
<b>A</b>	larger one	bottom of meniscus
<b>B</b>	larger one	top of meniscus
<b>C</b>	smaller one	bottom of meniscus
<b>D</b>	smaller one	top of meniscus

- 11 Diagram 1 shows a measuring cylinder containing water.

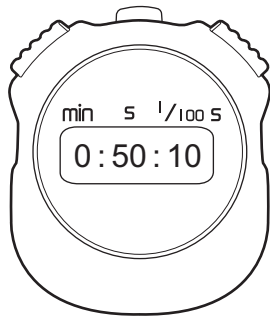
Five identical steel balls are now lowered into the measuring cylinder. Diagram 2 shows the new water level in the cylinder.



What is the volume of each steel ball?

- A**  $6 \text{ cm}^3$       **B**  $14 \text{ cm}^3$       **C**  $30 \text{ cm}^3$       **D**  $70 \text{ cm}^3$

- 12 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.



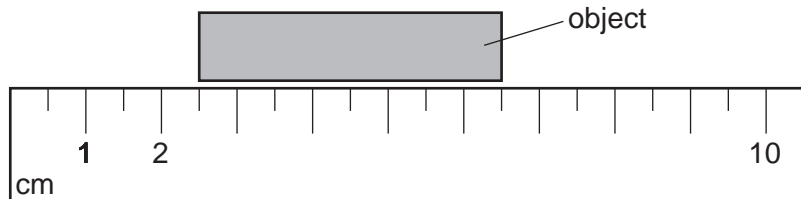
start of lap



end of lap

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

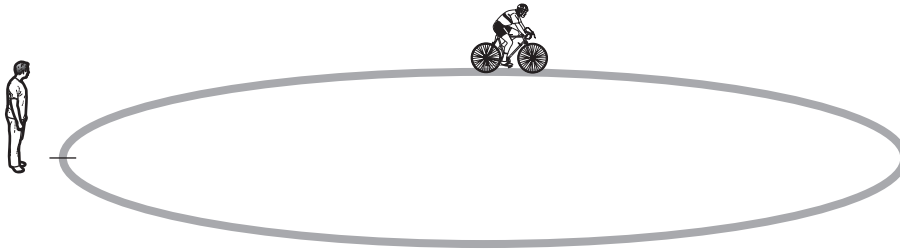
- A 50.00 seconds
  - B 50.10 seconds
  - C 90.00 seconds
  - D 100.10 seconds
- 13 A ruler is used to measure the length of an object.



What is the length of the object?

- A 3.0 cm
- B 4.0 cm
- C 5.0 cm
- D 6.5 cm

- 14 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.



at the  
start



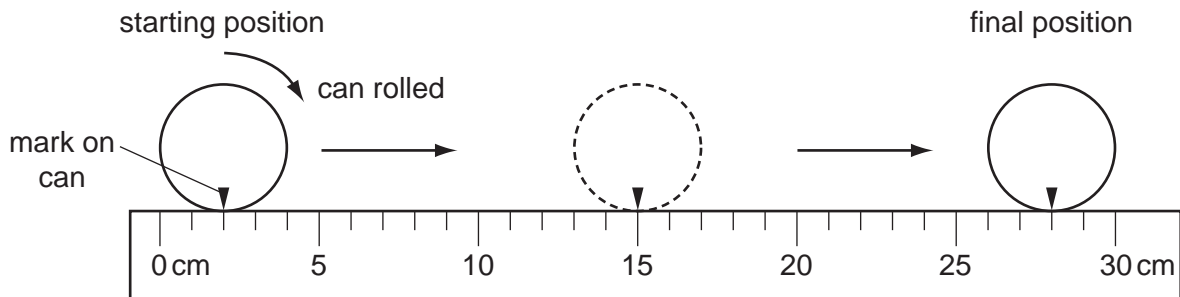
after  
one circuit



at the end of  
three circuits

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

- A** 174s      **B** 180s      **C** 198s      **D** 200s
- 15 A cylindrical can is rolled along the ruler shown in the diagram.

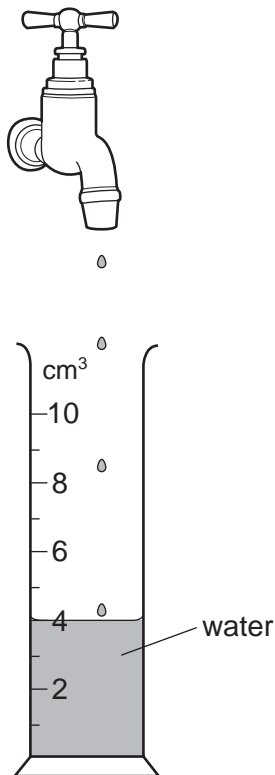


The can rolls over twice.

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

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

- 16 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<sup>3</sup>?

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