

# Length & Time

## Question Paper 1

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	Length & Time
Booklet	Question Paper 1

**Time allowed:** 20 minutes

**Score:** /16

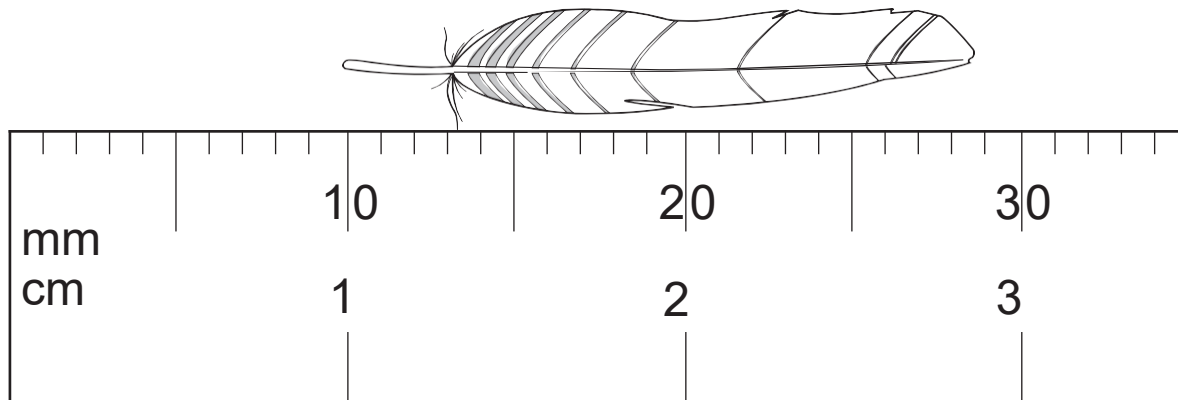
**Percentage:** /100

### Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

## Question 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

## Question 2

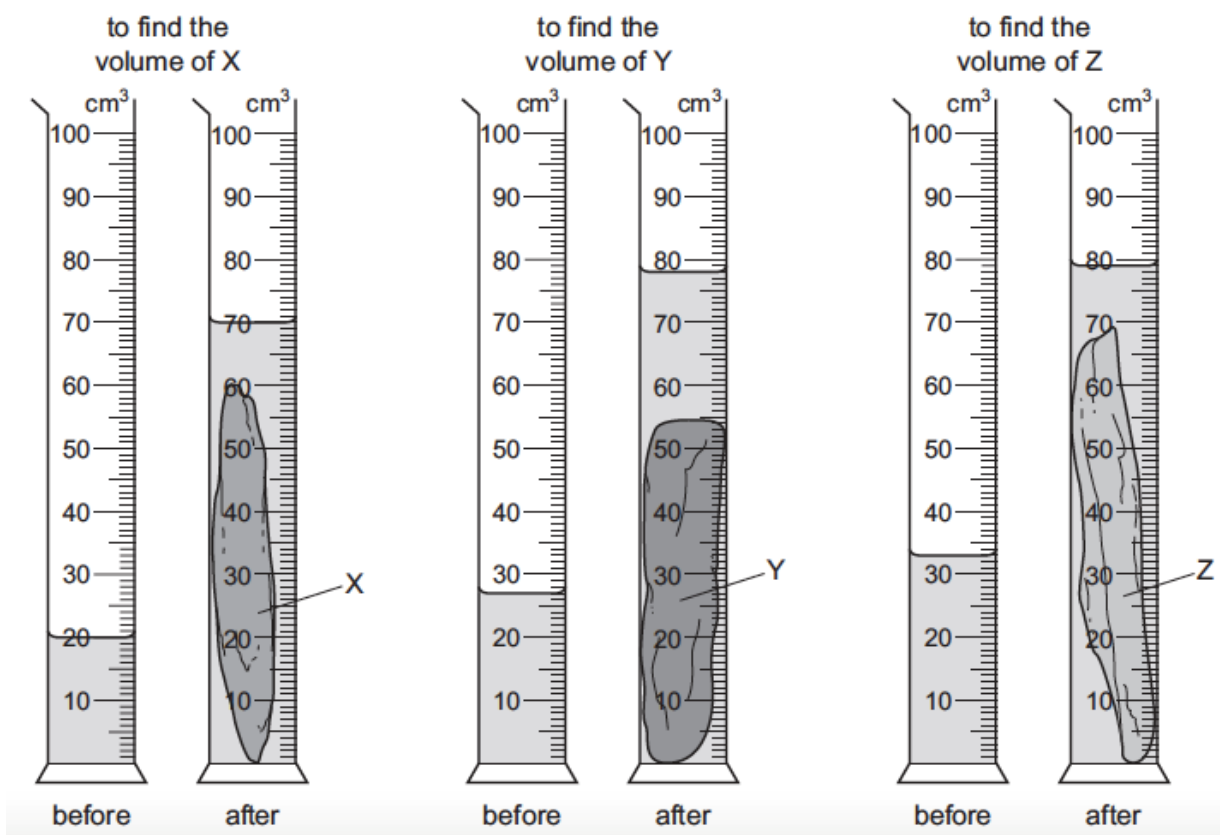
Which measurement can be made using a micrometer screw gauge?

- 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

### Question 3

A geologist compares the volumes of three rocks, X, Y and Z. Three measuring cylinders contain different volumes of water. He places each rock into one of the measuring cylinders.

The diagrams show the measuring cylinders before and after the rocks are put in.

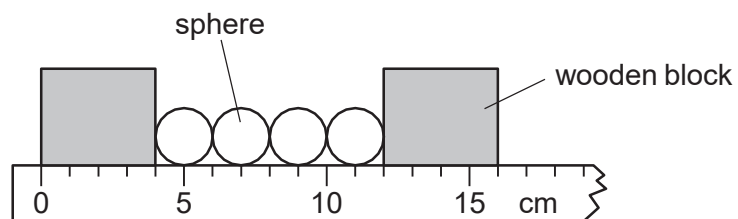


Which row shows the volumes of X, Y and Z in order, from largest to smallest?

	largest volume	→	smallest volume
<b>A</b>	X	Z	Y
<b>B</b>	Y	X	Z
<b>C</b>	Y	Z	X
<b>D</b>	Z	Y	X

## Question 4

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



What is the diameter of one sphere?

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

## Question 5

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.

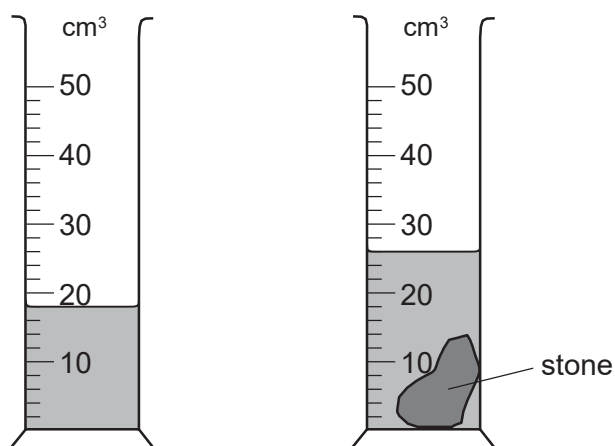
## Question 6

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

## Question 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>



## Question 8

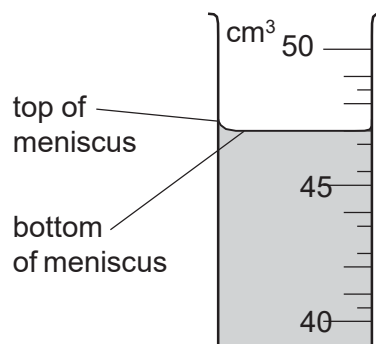
A student uses a measuring cylinder to measure the volume of a quantity of water.

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

## Question 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.

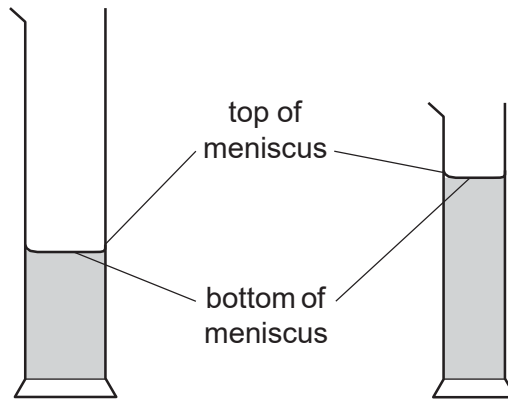


What is the volume of the water?

- A 47.0  $\text{cm}^3$       B 47.5  $\text{cm}^3$       C 49.0  $\text{cm}^3$       D 49.5  $\text{cm}^3$

## Question 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.



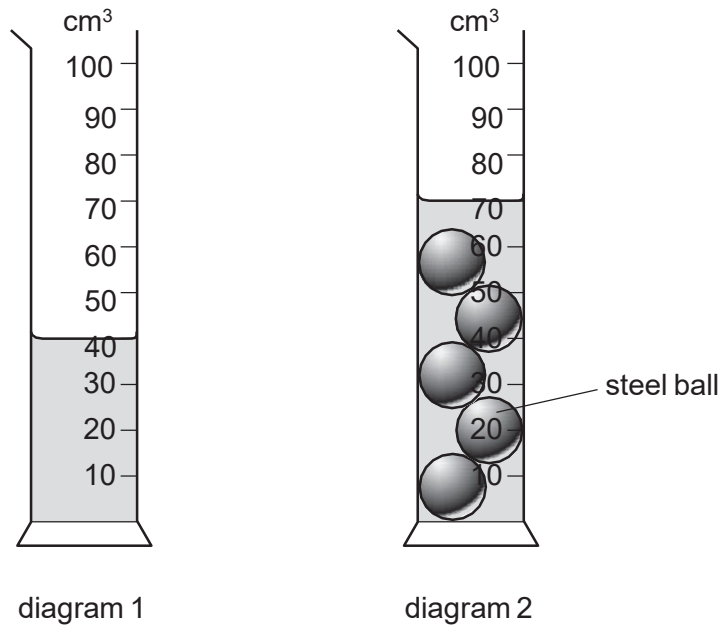
Which cylinder should the student use and which water level should she use to ensure an accurate result?

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

## Question 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.

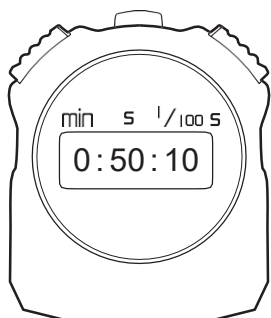


What is the volume of each steel ball?

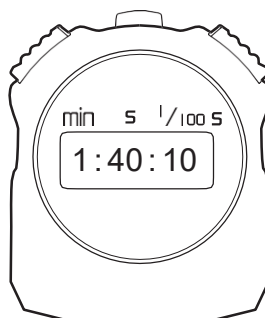
- A 6 cm<sup>3</sup>      B 14 cm<sup>3</sup>      C 30 cm<sup>3</sup>      D 70 cm<sup>3</sup>

## Question 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



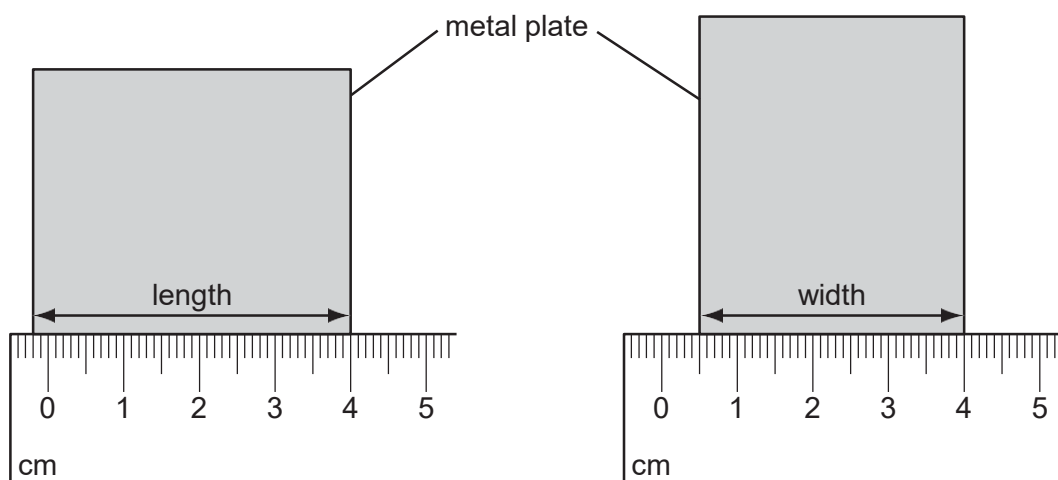
end of lap

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

### Question 13

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

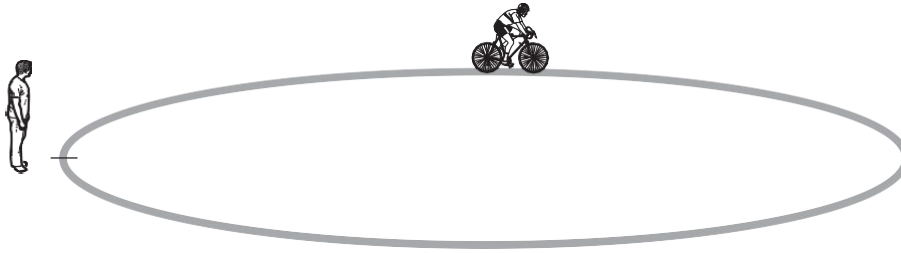


What is the area of the plate?

- A  $14.0\text{cm}^2$       B  $14.7\text{cm}^2$       C  $16.0\text{cm}^2$       D  $16.8\text{cm}^2$

## Question 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



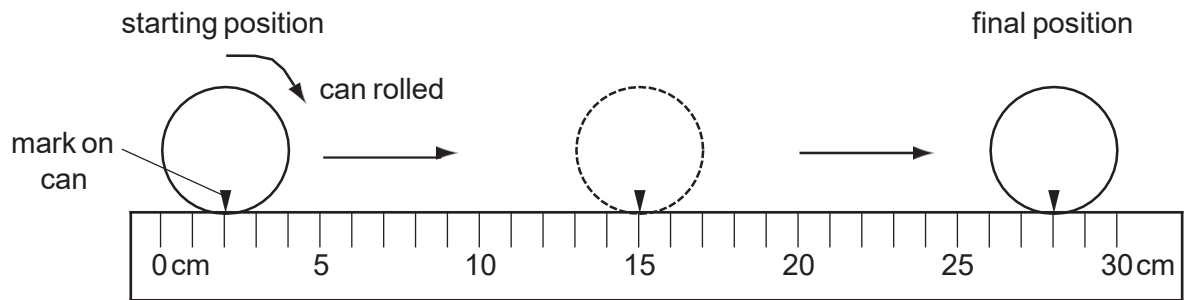
at the end of  
three circuits

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

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

## Question 15

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



The can rolls over twice.

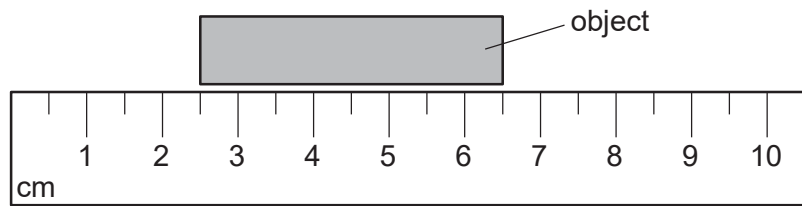
What is the circumference (distance all round) of the can?

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



## Question 16

A ruler is used to measure the length of an object.



What is the length of the object?

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