Physical Quantities & Measurement Techniques

Question Paper

Course	CIE IGCSE Physics
Section	1. Motion, Forces & Energy
Topic	Physical Quantities & Measurement Techniques
Difficulty	Hard

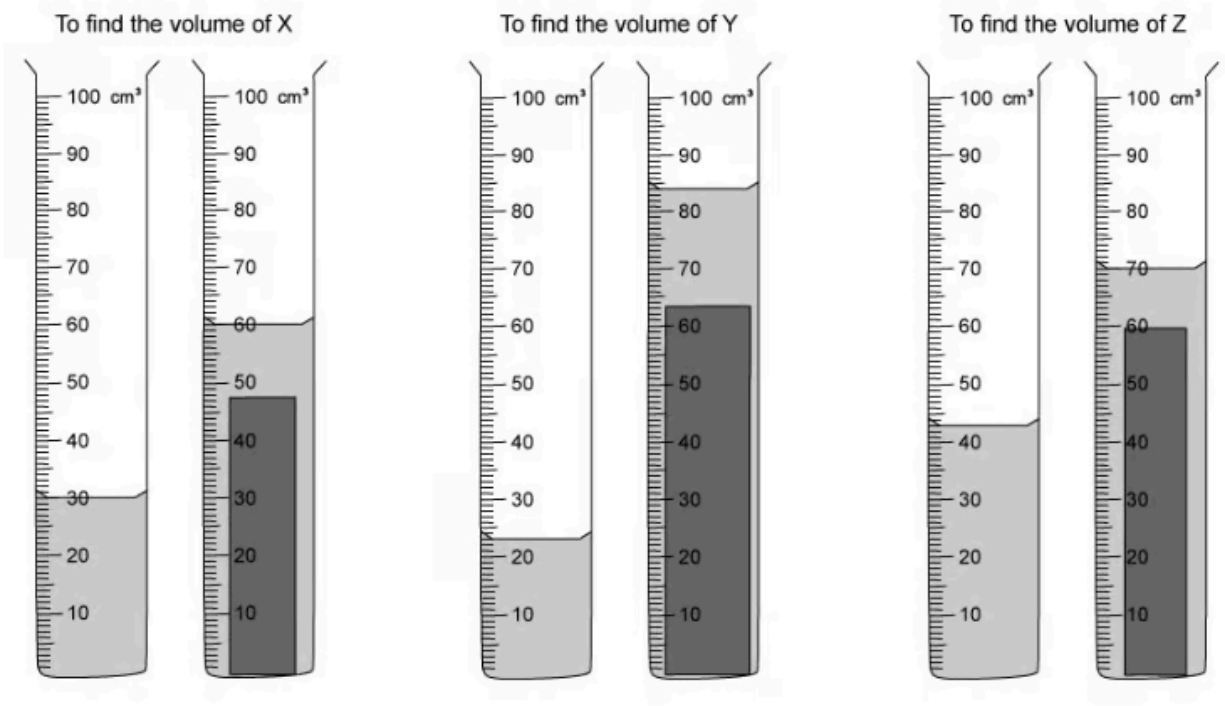
Time Allowed 10

Score /4

Percentage /100

Question 1

Three blocks are placed into three measuring cylinders. These are shown below.



Which row in the table shows the blocks in order of increasing volume?

	Smallest volume	→	Largest volume
A	X	Y	Z
B	Y	X	Z
C	Z	Y	X
D	Z	X	Y

[1 mark]

Question 2

A student is trying to see how quickly they can run 5.0 km on a standard 400 m running track.

They reason that, if they know how fast they can run one lap, they can assume they will run at the same speed for 5.0 km, and can calculate their predicted time.

They, correctly, reason that they will not be able to maintain their initial pace throughout the whole 5.0 km, so they decide to time lap 5.

The diagram shows the reading on the stopwatch at the beginning and the end of lap 5.

Start of lap

End of lap

Calculate how long it should take the student to run 5.0 km.

A. 36 minutes 52.5 seconds

B. 24 minutes 22.5 seconds

C. 13 minutes 0 seconds

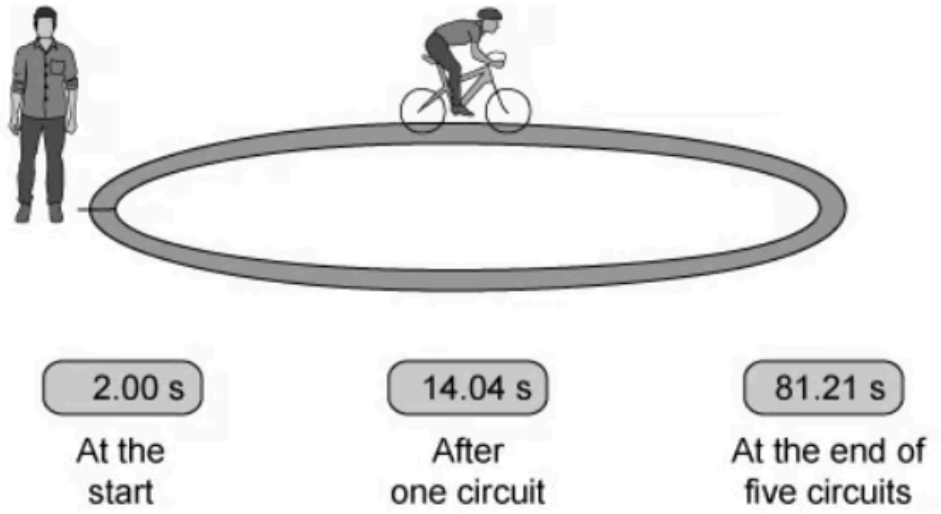
D. 9 minutes 45 seconds

[1 mark]

Question 3

An Olympic cyclist rides around a velodrome track 5 times.

The diagram below shows the reading on the stopwatch, which was used to time the laps. Unfortunately, the person using the stopwatch started it a little early, so the stopwatch reads 2 seconds when the cyclist starts.



What is the average time to complete one lap of the velodrome?

A. 16.24 s

B. 14.04 s

C. 15.84 s

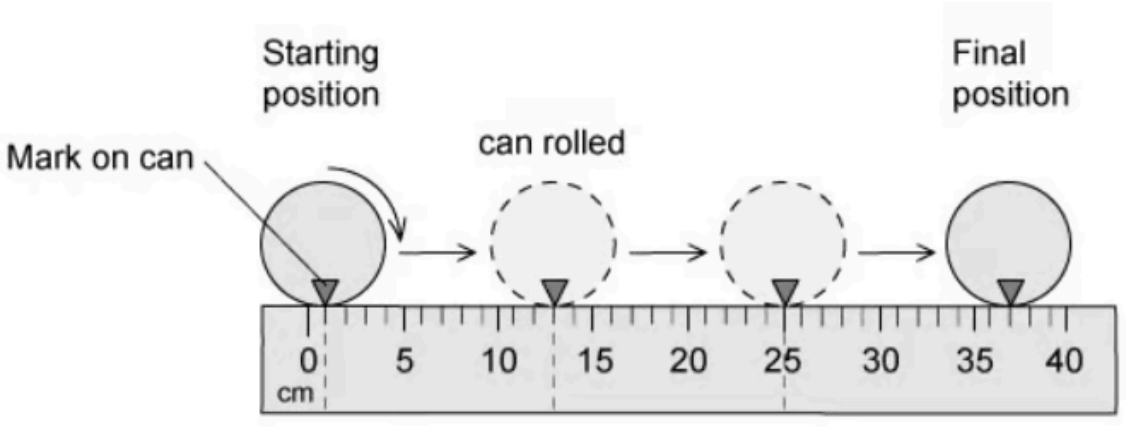
D. 15.21 s

[1 mark]

Question 4

A student uses a ruler to determine the circumference of a wooden dowel.

She puts a mark onto the dowel, then rolls it along the ruler three times, before reading the position on the ruler at which it stopped.



What is the circumference of the dowel?

A. 12 cm

B. 12.3 cm

C. 37 cm

D. 36 cm

[1 mark]