IGCSE Cambridge Topical Past Papers

PHYSICS

0625   Paper 3

2017 — 2023

PHYSICS 0625

TOPICAL PAST PAPER WORKSHEETS

2017 - 2023 | Questions + Mark scheme

AVAILABLE PAPERS

P1	**P2**	**P3**	**P4**	**P6**
1413 Questions	1401 Questions	511 Questions	491 Questions	177 Questions

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TOPICS	P1	P2	P3	P4	P6
MEASUREMENT & UNITS	76	64	33	15	15
FORCES & MOTION	170	212	64	66	15
FORCES & PRESSURE	101	85	51	43	20
FORCES & ENERGY	88	101	41	40	5
THERMAL EFFECTS	210	181	53	66	35
WAVES & SOUNDS	80	76	39	34	2
RAYS & WAVES	134	129	53	51	37
ELECTRICITY	191	182	54	64	42
MAGNETS & CURRENTS	143	141	60	36	1
ELECTRICITY & ELECTRONICS	72	90	18	26	5
RADIOACTIVITY	130	119	39	41	0
SPACE PHYSICS	18	21	6	9	0

1 - (0625/31_Summer_2017_Q1) - *Measurements And Units*

A pipe drips water into an empty glass jar. A student takes measurements to find how fast the water is rising up the jar. Fig. 1.1 shows the arrangement.
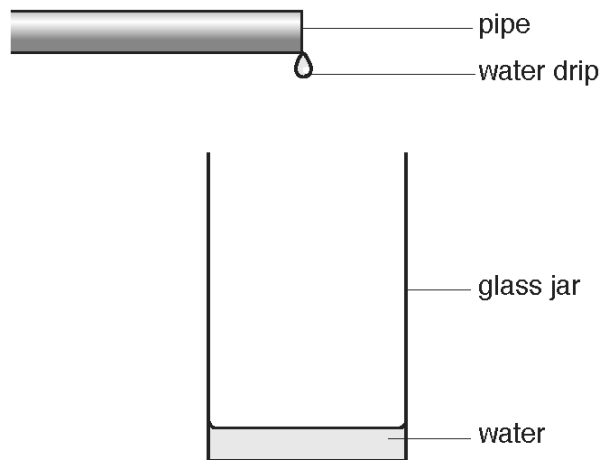
Fig. 1.1

(a) The student measures the depth of the water every minute.

State the **two** pieces of equipment that she uses.

1. ....

2. ....
                                [2]

(b) The student records her observations in a table. She then plots a graph using the axes shown in Fig. 1.2.
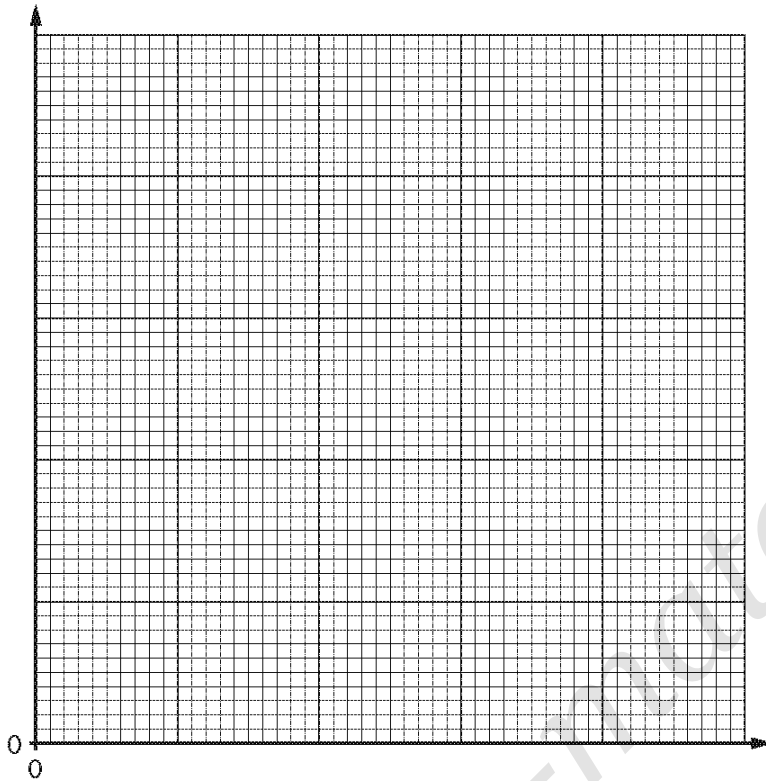
Fig. 1.2

(i) On Fig. 1.2, label both axes with title and unit. [2]

(ii) The water rises up the jar at a constant rate.

Draw a line on Fig. 1.2 to show the student's graph. Start the line from the time when the jar is empty. [2]

(c) A puddle of water forms on the ground. The average depth of the water is 2.5 mm.

Determine the average depth of the water in m.

depth = ... m [2]

2 - (0625/32_Summer_2017_Q1) - *Measurements And Units, Forces And Motion*

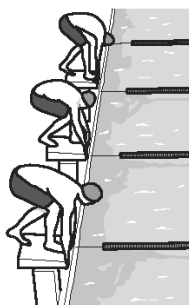Fig. 1.1 shows students about to start a 50.0 m swimming race.

Fig. 1.1

(a) The length of the pool is 50.0 m.

Name a suitable piece of equipment that could be used to measure the length of the pool.

....[1]

(b) The race starts and the students swim to the end of the 50.0 m pool.

Fig. 1.2 shows the times recorded on the stop watches for the winner and the swimmer in second place.
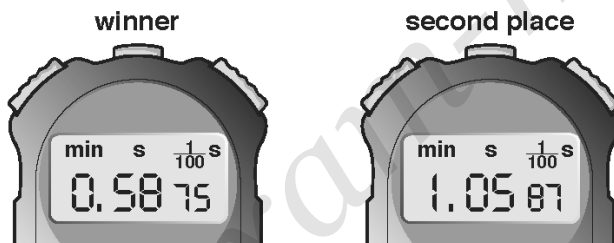
Fig. 1.2

(i) Determine the time taken by the winner to swim 50.0 m. Use information from Fig. 1.2.

winner's time = ... s [1]

(ii) Calculate the average speed of the winner.

average speed = ... m/s [2]

(iii) Calculate the time difference between the winner and the swimmer in second place.

time difference = ... s [1]

3 - (0625/33_Summer_2017_Q1) - *Measurements And Units*

A student measures a book.

(a) He measures the length of the book, as shown in Fig. 1.1.

Fig. 1.1

The student records his measurement.

length of book = ...19.9 cm...........................

His measurement is not accurate.

Describe **two** ways that the student can improve the accuracy of his measurement.

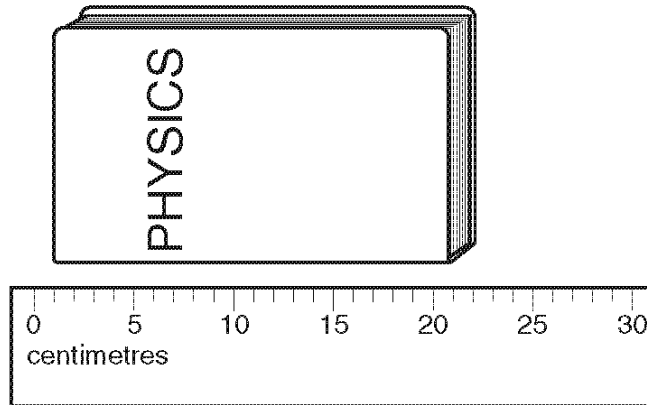1. ....

....

2. ....

....

[2]

(b) The book contains 200 thin sheets of paper.
The student wants to find the average (mean) thickness of a sheet of paper in the book.

Describe how he can determine such a small distance using only a ruler.

....

....

....

....

....[3]

(c) The book has a mass of 400g.

Calculate the weight of the book. Include the unit.

weight = ...[4]

ANSWERS

1 - (0625/31_Summer_2017_Q1) - *Measurements And Units*

(a)	rule(r)	B1
	(stop) watch/clock	B1
(b)(i)	x–axis labelled time/t with minutes	B1
	y-axis clearly labelled depth/distance/height with mm/cm/m	B1
(b)(ii)	line drawn from the origin	B1
	single straight diagonal line	B1
(c)	1000 mm = 1 m **OR** 2.5 ÷ 1000	C1
	0.0025 (m) **OR** 2.5×10^{-3}	A1

2 - (0625/32_Summer_2017_Q1) - *Measurements And Units, Forces And Motion*

(a)	flexible rule/tape measure/measuring tape	B1
(b)(i)	58.75 (s)	B1
(b)(ii)	speed = distance ÷ time in any form	C1
	0.85 (m/s)	A1
(b)(iii)	7.12 (s)	B1

3 - (0625/33_Summer_2017_Q1) - *Measurements And Units*

(a)	any two from: use a ruler with mm (scale) ruler close(r) to book/no space between book and ruler have zero on ruler at one end of book take reading with eye in line with end of book owtte	B2
(b)	use large number of pages i.e. more than 50	B1
	measure (total) thickness (with ruler)	B1
	divide (total) thickness by number of pages	B1
(c)	convert g to kg or 400 ÷ 1000	B1
	Weight = mass × gravitational field strength in any form	C1
	(weight =) 4.0	A1
	(unit) N or newtons	B1

4 - (0625/32_Summer_2017_Q2) - *Measurements And Units*

(a)(i)	6500 (g)	B1
(a)(ii)	density = mass ÷ volume in any form	B1
	1.3	A1
	g/cm^3	B1
(b)	density (of brush) is less (than) density of paint	B1

5 - (0625/31_Winter_2017_Q1) - *Measurements And Units*

(a)	stopwatch or stopclock	B1
(b)	improved accuracy	B1
(c)(i)	circle around 3rd OR 3.55	B1
(c)(ii)	3.93 + 4.07 + 3.99 = 11.99	C1
	(11.99 ÷ 3 =) 4.0 (s)	A1
(c)(iii)	0.40 (s) OR **(c)(ii)** ÷ 10	B1

6 - (0625/33_Winter_2017_Q2) - *Measurements And Units*

(a)	measuring cylinder (partially filled) with water / displacement can filled with water	B4
	object (submerged) into water owtte	
	new volume noted / displaced water collected in measuring cylinder	
	(volume of object =) difference in volumes / volume of water collected	
(b)	density = mass ÷ volume written in any recognised form	C1
	347 ÷ 18	C1
	19.28 **OR** 19.3 (g / cm^3)	A1

7 - (0625/31_Winter_2017_Q3) - *Forces And Motion, Measurements And Units*

(a)	subtraction of forces to obtain resultant or 30 (N)	B1
	up(wards)	B1
(b)	any five from: measure mass (on top pan balance) part fill measuring cylinder with water (and note volume) submerge link in measuring cylinder determine increase in volume increase in volume = volume of link use density = mass ÷ volume Only award full marks for a viable method	B5

8 - (0625/32_Winter_2017_Q3) - *Measurements And Units, Forces And Pressure*

(a)(i)	$D = M / V$	C1
	450 / 145	C1
	3.1 (g / cm^3)	A1
(a)(ii)	$W = m \times g$ in any form	C1
	0.45 × 10	C1
	4.5 (N)	A1
(b)	$P = F / A$ in any form	C1
	30 / 80	C1
	0.375 (N / cm^2) OR 0.38 (N / cm^2)	A1