

TOPICAL PAST PAPER QUESTIONS WORKSHEETS

IGCSE International Mathematics (0607)

Paper 2 (Extended)

Exam Series: May/June 2017 – May/June 2023

Format Type B:

Each question is followed by its answer scheme



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Introduction

Each Topical Past Paper Questions Workbook contains a comprehensive collection of hundreds of questions and corresponding answer schemes, presented in worksheet format. The questions are carefully arranged according to their respective chapters and topics, which align with the latest IGCSE or AS/A Level subject content. Here are the key features of these resources:

1. The workbook covers a wide range of topics, which are organized according to the latest syllabus content for Cambridge IGCSE or AS/A Level exams.
2. Each topic includes numerous questions, allowing students to practice and reinforce their understanding of key concepts and skills.
3. The questions are accompanied by detailed answer schemes, which provide clear explanations and guidance for students to improve their performance.
4. The workbook's format is user-friendly, with worksheets that are easy to read and navigate.
5. This workbook is an ideal resource for students who want to familiarize themselves with the types of questions that may appear in their exams and to develop their problem-solving and analytical skills.

Overall, Topical Past Paper Questions Workbooks are a valuable tool for students preparing for IGCSE or AS/A Level exams, providing them with the opportunity to practice and refine their knowledge and skills in a structured and comprehensive manner. To provide a clearer description of this book's specifications, here are some key details:

- Title: Cambridge IGCSE International Mathematics (0607) Paper 2 Topical Past Paper Questions
- Subtitle: Exam Practice Worksheets With Answer Scheme
- Examination board: Cambridge Assessment International Education (CAIE)
- Subject code: 0607
- Years covered: May/Jun 2017 – May/Jun 2023
- Paper: 2
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Chapter 1

Number

1. 0607_m23_qp_22 Q: 1

71 73 75 77 79 81 87

From this list of numbers write down

(a) a prime number

..... [1]

(b) a square number.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	71 or 73 or 79	1	
(b)	81	1	

2. 0607_m23_qp_22 Q: 2

Work out 10% of 250.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	25	1	

3. 0607_m23_qp_22 Q: 3

Work out.

(a) 2.04×20

..... [1]

(b) $\frac{0.09}{0.003}$

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	40.8[0]	1	
(b)	30 or 3×10^1	1	

4. 0607_m23_qp_22 Q: 8

$$p = 2 \times 10^3 \quad q = 8 \times 10^{-5}$$

Work out the following, giving each answer in standard form.

(a) pq

..... [2]

(b) $\frac{p}{q}$

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
(a)	1.6×10^{-1} cao	2	B1 for correct answer not in standard form seen
(b)	2.5×10^7 cao	2	B1 for correct answer not in standard form seen If 0 scored SC1 for figs 25 seen

5. 0607_s23_qp_21 Q: 1

(a) Insert **one** pair of brackets to make the statement correct.

$$3 \times 7 + 2 + 9 = 36 \quad [1]$$

(b) Work out $(0.2)^3$.

..... [1]

(c) Write down a prime number between 80 and 90.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	$3 \times (7 + 2) + 9 = 36$	1	
(b)	0.008 oe	1	
(c)	83 or 89	1	

6. 0607_s23_qp_21 Q: 5

(a) Work out $\frac{11}{12} + \frac{3}{4}$.

Give your answer as a mixed number in its simplest form.

..... [2]

(b) Simplify $\frac{a}{x} \div \frac{b}{2y}$.

Give your answer as a single fraction.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	$1\frac{2}{3}$ cao	2	M1 for $\frac{11}{12} + \frac{9}{12}$
(b)	$\frac{2ay}{bx}$ final answer	1	

7. 0607_s23_qp_21 Q: 11

Simplify $\sqrt{27} + \sqrt{12} - \sqrt{108}$.

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
	$-\sqrt{3}$	2	B1 for two of $3\sqrt{3}$ or $2\sqrt{3}$ or $6\sqrt{3}$

8. 0607_s23_qp_22 Q: 1

Write down

(a) a square number between 101 and 150

..... [1]

(b) a fraction between $\frac{2}{3}$ and $\frac{3}{4}$

..... [1]

(c) an irrational number between 6 and 7.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	121 or 144	1	
(b)	Any correct fraction	1	
(c)	Any correct irrational number	1	

9. 0607_s23_qp_22 Q: 2

Work out.

(a) $-7 \div -2$

..... [1]

(b) $(0.3)^2$

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	3.5 or $3\frac{1}{2}$	1	
(b)	0.09	1	

10. 0607_s23_qp_22 Q: 6

Find the value of $64^{\frac{1}{3}}$.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	4 cao	1	

11. 0607_s23_qp_22 Q: 7

Lee cycles for 60 km at an average speed of 30 km/h.
He then returns along the same route at an average speed of 20 km/h.

Find Lee's average speed for the whole journey.

..... km/h [3]

Answer:

Question	Answer	Marks	Partial Marks
	24	3	B2 for 3[h] and 2[h] soi by 5 [h] or B1 for 60/30 or 60/20 or 3[h] If B0 or B1 scored, then M1 for $120 \div \textit{their}$ total time (<i>their</i> total time MUST be greater than 2)

12. 0607_s23_qp_22 Q: 13

Rationalise the denominator and simplify.

$$\frac{2}{3 - \sqrt{5}}$$

..... [3]

Answer:

Question	Answer	Marks	Partial Marks
	$\frac{3+\sqrt{5}}{2}$ cao final answer	3	B2 for $\frac{2(3+\sqrt{5})}{4}$ or $\frac{6+2\sqrt{5}}{4}$ or M1 for $\times \frac{3+\sqrt{5}}{3+\sqrt{5}}$

13. 0607_s23_qp_23 Q: 1

29 31 41 49 51 59

From this list, write down **all** the numbers that are prime numbers.

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
	29 31 41 59	2	B1 for at least two correct

14. 0607_s23_qp_23 Q: 3

Work out.

(a) 0.04×0.06

..... [1]

(b) $\frac{0.02}{0.8}$

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	0.0024 oe	1	
(b)	0.025 oe	1	

15. 0607_s23_qp_23 Q: 7

(a) Write 0.003 08 in standard form.

..... [1]

(b) Work out $(7 \times 10^6) \times (3 \times 10^{-8})$.

Give your answer in standard form.

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
(a)	3.08×10^{-3} cao	1	
(b)	2.1×10^{-1} cao	2	M1 for correct answer not in standard form

16. 0607_s23_qp_23 Q: 9

The total cost of 5 pens and 7 pencils is \$6.75 .
Each pencil costs \$0.45 .

Find the cost of one pen.

\$ [3]

Answer:

Question	Answer	Marks	Partial Marks
	0.72	3	M2 for $\frac{6.75 - \text{their}(7 \times 0.45)}{5}$ oe or M1 for $6.75 - 7 \times 0.45$ oe if 0 scored, SC2 for 72

17. 0607_s23_qp_23 Q: 10

Write 48 as a product of its prime factors.

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
	$2^4 \times 3$ or $2 \times 2 \times 2 \times 2 \times 3$	2	M1 for 2^k and 3 seen

18. 0607_m22_qp_22 Q: 1

Write down a cube number between 10 and 100.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	27 or 64	1	

19. 0607_m22_qp_22 Q: 2

Work out $(0.1)^4$.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	0.0001	1	

20. 0607_m22_qp_22 Q: 3

Alex goes to sleep at 20 40 and wakes up the next morning at 06 10.

Work out the length of time, in hours and minutes, that Alex is asleep.

..... h min [1]

Answer:

Question	Answer	Marks	Partial Marks
	9h 30min	1	

21. 0607_m22_qp_22 Q: 5

Work out $\frac{3}{4} - \frac{1}{6}$, giving your answer as a fraction in its lowest terms.

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
	$\frac{7}{12}$	2	M1 for $\frac{9}{12} - \frac{2}{12}$ oe i.e. common denominator

22. 0607_m22_qp_22 Q: 6

Divide \$140 in the ratio 2 : 1 : 4.

\$, \$, \$ [2]

Answer:

Question	Answer	Marks	Partial Marks
	40, 20, 80	2	M1 for $140 \div (2 + 1 + 4)$ soi

23. 0607_m22_qp_22 Q: 8

Write 4^{-2} as a fraction.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	$\frac{1}{16}$ cao	1	

24. 0607_m22_qp_22 Q: 9

A train is travelling at a speed of 30 m/s.

The length of the train is 70 m.

The train passes through a station of length 170 m.

Find the time the train takes to pass completely through the station.

..... s [2]

Answer:

Question	Answer	Marks	Partial Marks
	8	2	M1 for $(170 + 70) \div 30$ If 0 scored SC1 for answer $5\frac{2}{3}$ oe

25. 0607_m22_qp_22 Q: 13

Rationalise the denominator.

$$\frac{2}{\sqrt{3}}$$

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	$\frac{2\sqrt{3}}{3}$	1	

26. 0607_m22_qp_22 Q: 14

In this calculation, the three numbers are written in standard form.

$$(4 \times 10^p) \times (n \times 10^{p+2}) = 3.2 \times 10^t$$

 n , p and t are integers.**(a)** Find the value of n .

$$n = \dots\dots\dots [1]$$

(b) Find t in terms of p .

$$t = \dots\dots\dots [1]$$

Answer:

Question	Answer	Marks	Partial Marks
(a)	8	1	
(b)	$2p + 3$	1	If 0 scored in (a) and (b) SC1 for $n = 0.8$ and $2p + 2$

27. 0607_s22_qp_21 Q: 3

From the list of numbers, write down

(a) the prime number,
$$\dots\dots\dots [1]$$
(b) the cube number.
$$\dots\dots\dots [1]$$

Answer:

Question	Answer	Marks	Partial Marks
(a)	29 only	1	
(b)	27 only	1	

28. 0607_s22_qp_21 Q: 5

(a) Write 7.29784 correct to 3 significant figures.

..... [1]

(b) Write 0.00000306 in standard form.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	7.30 cao	1	
(b)	3.06×10^{-6} final answer cao	1	

29. 0607_s22_qp_21 Q: 8

Find the value of $49^{\frac{1}{2}}$.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	7	1	

30. 0607_s22_qp_21 Q: 9

Write 90 as the product of its prime factors.

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
	$2 \times 3 \times 3 \times 5$ or $2 \times 3^2 \times 5$ final answer	2	M1 for 2, 3 and 5 seen as factors

31. 0607_s22_qp_21 Q: 13

(a) Simplify fully.

$$\sqrt{75} - \sqrt{48} + \sqrt{12}$$

..... [2]

(b) Rationalise the denominator, giving your answer in its simplest form.

$$\frac{1}{\sqrt{3} + 5}$$

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
(a)	$3\sqrt{3}$ final answer	2	M1 for either $5\sqrt{3}$ or $2\sqrt{3}$

Question	Answer	Marks	Partial Marks
(b)	$-\frac{\sqrt{3}-5}{22}$ or $\frac{5-\sqrt{3}}{22}$ oe final answer	2	M1 for $\times \frac{\sqrt{3}-5}{\sqrt{3}-5}$ oe Must be convinced that $\sqrt{3}-5$ and NOT $\sqrt{3-5}$

32. 0607_s22_qp_22 Q: 1

Work out.

$$(0.03)^2$$

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	0.0009	1	

33. 0607_s22_qp_22 Q: 2

(a) Write the fraction $\frac{15}{40}$ in its lowest terms.

..... [1]

(b) Work out.

$$\frac{2}{3} + \frac{2}{9}$$

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
(a)	$\frac{3}{8}$ final answer	1	
(b)	$\frac{8}{9}$	2	M1 for both fractions correct with same common denominator

34. 0607_s22_qp_22 Q: 5

Work out $64^{\frac{1}{3}}$.

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
	4 only	1	

35. 0607_s22_qp_22 Q: 7

Kendra jogs 7 km in 45 minutes.
She then runs at 12 km/h for 30 minutes.

Find her average speed in km/h for the whole journey.

..... km/h [3]

Answer:

Question	Answer	Marks	Partial Marks
	10.4 or $\frac{156}{15}$ oe	3	M2 for $\frac{(7+12 \times \frac{30}{60})}{45+30} \times 60$ or $\frac{(7+6)}{0.75+0.5}$ oe or M1 for (<i>their</i> total dist) / (<i>their</i> total time)

36. 0607_s22_qp_22 Q: 17

(a) Expand the brackets and simplify.

$$(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})$$

..... [2]

(b) Rationalise the denominator.

$$\frac{1}{\sqrt{7} + \sqrt{6}}$$

..... [1]

(c) Work out the value of

$$\frac{1}{\sqrt{9} + \sqrt{8}} + \frac{1}{\sqrt{8} + \sqrt{7}} + \frac{1}{\sqrt{7} + \sqrt{6}} + \frac{1}{\sqrt{6} + \sqrt{5}} + \frac{1}{\sqrt{5} + \sqrt{4}}.$$

..... [2]

Answer:

Question	Answer	Marks	Partial Marks
(a)	$a - b$	2	M1 for $\sqrt{a}\sqrt{a} - \sqrt{a}\sqrt{b} + \sqrt{b}\sqrt{a} - \sqrt{b}\sqrt{b}$ oe
(b)	$\sqrt{7} - \sqrt{6}$	1	
(c)	1	2	M1 for at least 3 of $\sqrt{9} - \sqrt{8} + \sqrt{8} - \sqrt{7} \dots - \sqrt{4}$ or B1 for $\sqrt{9} - \sqrt{4}$

37. 0607_s22_qp_23 Q: 1

Work out.

(a) 0.3×0.2

..... [1]

(b) $12 \div 0.4$

..... [1]

Answer:

Question	Answer	Marks	Partial Marks
(a)	0.06	1	
(b)	30	1	