IGCSE International Mathematics (0607)

Paper 3 (Core)

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

Format Type A:
Answers to all questions are provided as an appendix

Introduction

Each Topical Past Paper Questions Compilation 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 3 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: 3

- Number of pages: 687

- Number of questions: 409

Contents

Chapter 1

Number

1. 0607_m23_qp_32 Q: 1

(a)   121   122   123   124   125   126   127

From this list, write down a number that is

(i)   even

.... [1]

(ii)   a square

.... [1]

(iii)   a cube

.... [1]

(iv)   a multiple of 7

.... [1]

(v)   prime.

.... [1]

(b) (i)   Find the value of $\sqrt[3]{3.628}$.

Give your answer correct to 3 decimal places.

.... [2]

(ii)   Find the value of $\dfrac{36.2 \times 21.4}{0.23}$.

Give your answer correct to the nearest hundred.

.... [2]

2. 0607_m23_qp_32 Q: 3

In 2019 the Louvre museum had 9 609 900 visitors.

(a) Write 9 609 900 in words.

....

.... [1]

(b) The Louvre museum is open 309 days of the year.

Work out the average number of visitors per day.

.... [1]

(c) 40% of all visitors are admitted free.

(i) Write down the percentage of visitors who have to pay.

.... % [1]

(ii) The admission price is 15 euros (€).

Work out how much money, on average, was paid to the Louvre museum each day for admissions.

€ .... [3]

3. 0607_m23_qp_32 Q: 4

(a) Prija changes 600 pounds (£) to US dollars ($) at a bank.

    (i) The bank charges 2% of the £600 to change the money.

        Show that the bank charges £12.

[1]

    (ii) The bank takes the £12 charge and then changes the rest of the money.
         The exchange rate is £1 = $1.335 .

        Work out how much money, in $, Prija receives.

$ .... [2]

(b) From the money Prija receives, she spends $150 on food, $225 on entertainment and $130 on gifts.

Work out how much, in $, Prija has left.

$ .... [2]

(c) Prija changes the remaining dollars back to pounds at a rate of £1 = $1.347 .
The bank does not charge to make the change.

Work out how much money, in £, she receives.

£ .... [1]

4. 0607_s23_qp_31 Q: 2

(a) Tilda and Kim sell bottles of salad dressing.

At the beginning of Monday, they have 200 bottles of salad dressing for sale.
During Monday, Tilda sells half of the 200 bottles and Kim sells 10% of the 200 bottles.

Work out how many of the 200 bottles are left at the end of Monday.

.... [3]

(b) A bottle of salad dressing costs $3.25 .

Work out the greatest number of bottles of salad dressing that can be bought with $20 and how much change there is.

.... bottles with $ .... change [3]

(c) Salad dressing is made by mixing oil and vinegar in this ratio.

$$oil : vinegar = 5 : 3$$

Work out how much oil and how much vinegar is needed to make 1 litre of salad dressing.
Give your answers in millilitres.

Oil .... ml

Vinegar .... ml

[3]

(d) Kim invests $5000 at 4% per year simple interest.

Work out how much the investment is worth at the end of 3 years.

$ .... [3]

5. 0607_s23_qp_31 Q: 5

(a) Write these decimals in order of size, starting with the smallest.

0.6   0.63   0.069   0.608

.... [2]

smallest

(b) Find the value of $\sqrt{29}$.
Write your answer correct to 3 significant figures.

.... [2]

(c) **(i)** Write 0.000 035 in standard form.

.... [1]

(ii) Work out $\dfrac{4 \times 10^6}{8 \times 10^{-2}}$.
Give your answer in standard form.

.... [2]

6. 0607_s23_qp_32 Q: 1

(a) Show that, in a year of 365 days, there are 31 536 000 seconds.

[2]

(b) (i) Write 31 536 000 in words.

....

.... [1]

(ii) Write 31 536 000 in standard form.

.... [1]

(c) Write down all the factors of 49.

.... [2]

(d) Write $\frac{1}{4}$ as a percentage.

.... % [1]

(e) Find $\sqrt{604}$.

Give your answer correct to 3 decimal places.

.... [2]

(f) Work out $4.85 - 3.26 \times 2.31$.

Give your answer correct to 4 significant figures.

.... [2]

(g) Write these numbers in order of size, starting with the smallest.

$$5.6 \qquad 5.56 \qquad 5.06 \qquad 5.65$$

.... [2]
smallest

7. 0607_s23_qp_32 Q: 3

(a) Petrol costs $0.76 per litre.

Work out the amount of petrol that can be bought with $10.

.... litres [2]

(b) Company A and Company B have cars to rent.
Company A charges $50 for the first day and $28 for each additional day.

  (i) Find the cost of renting a car from Company A for 4 days.

$ .... [2]

  (ii) Company B charges $200 to rent a car for a week.
Selma wants to rent a car for 2 weeks.

Work out whether Company A or Company B is cheaper for Selma.
You must show all your working.

[3]

8. 0607_s23_qp_33 Q: 1

(a) Work out.

(i) $\dfrac{2}{3} \times \dfrac{2}{5}$

.... [1]

(ii) $5^3 - 2^4$

.... [2]

(b) Write 80 as a product of its prime factors.

.... [2]

(c) Work out $4\,500\,000\,000 - 5.8 \times 10^7$.
Give your answer in standard form.

.... [2]

(d) Write 3.9×10^{-4} as an ordinary number.

.... [1]

9. 0607_s23_qp_33 Q: 8

(a) Atif and Faiza share $5000 in this ratio.

$$\text{Atif : Faiza} = 3 : 7$$

Work out how much they each receive.

Atif $ ....

Faiza $ .... [2]

(b) Atif earns $2200 each month.

Each month he gives $\frac{1}{8}$ of his earnings to charity.

Work out how much Atif has left each month after giving to charity.

$ .... [2]

(c) Faiza gives $40 to charity each month.
She increases this amount by 14%.

Work out how much Faiza now gives to charity each month.

$ .... [2]

10. 0607_m22_qp_32 Q: 6

In a school there are 960 students.
540 of the students are girls.

(a) Write the ratio   girls : boys   in its simplest form.

.... : .... [3]

(b) Two thirds of the 540 girls and 45% of the boys travel to school by bus.

Work out how many **more** girls than boys travel to school by bus.

.... [3]

11. 0607_s22_qp_31 Q: 1

(a) Write the number 20 202 in words.

.... [1]

(b) Work out.

$$\frac{6.27 + 2.48}{1.75}$$

.... [1]

(c) Write down all the factors of 42.

.... [2]

(d) Write down a prime number between 15 and 20.

.... [1]

(e) Write 7832.948

    (i) correct to 2 decimal places,

.... [1]

    (ii) correct to 4 significant figures,

.... [1]

    (iii) correct to the nearest 100.

.... [1]

(f) Insert the symbols $( ), +, -, \times$ so that the following statement is correct.

$$5 \quad 3 \quad 4 \quad 1 = 9$$

[1]

(g) Jeffrey invests $550 for 3 years at a rate of 3.2% per year simple interest.

Work out the interest he receives.

$ .... [2]

12. 0607_s22_qp_31 Q: 12

Ruben's house is 1.3 km from the supermarket.

(a) He walks to the supermarket at a speed of 5 km/h.

Work out how long it takes him.
Give your answer in minutes and seconds.

.... min .... s [3]

(b) On another day, Ruben cycles to the supermarket in a time of 5 minutes 12 seconds.

(i) Show that 12 seconds = 0.2 minutes.

[1]

(ii) Work out Ruben's average speed when cycling to the supermarket.
Give your answer in km/h.

.... km/h [2]

13. 0607_s22_qp_32 Q: 1

(a) 21 22 23 24 25 26 27 28 29

From this list of numbers, write down

  (i) an even number,

.... [1]

  (ii) a multiple of 6,

.... [1]

  (iii) a factor of 100,

.... [1]

  (iv) a prime number.

.... [1]

(b) Find the value of

  (i) $\sqrt{841}$,

.... [1]

  (ii) 6^3 .

.... [1]

(c) Work out.

$$\frac{13.25 + 35.51}{5.2}$$

Give your answer correct to 2 decimal places.

.... [2]

14. 0607_s22_qp_32 Q: 5

(a) The table shows the melting point, in °C, of some metals.

Metal	Melting point (°C)
Zinc	420
Gold	1063
Silver	893
Copper	1084
Aluminium	660

(i) Write these five temperatures in order of size starting with the smallest.

.... , ... , ... , ... , ... [1]
    smallest

(ii) Write 1063 correct to the nearest 10.

.... [1]

(iii) Write 1084 in words.

.... [1]

(b) Brass can be made by combining copper and zinc in this ratio.

copper : zinc = 13 : 7

Work out the mass of copper and the mass of zinc used to make 60 kg of brass.

copper .... kg

zinc .... kg [2]

15. 0607_s22_qp_32 Q: 6

(a) **(i)** A train travels from Amsterdam to Brussels in 2 hours 15 minutes.
It leaves Amsterdam at 11 10.

Work out the time the train arrives in Brussels.

.... [1]

(ii) On its return journey, the train leaves Brussels at 14 50.
It arrives in Amsterdam at 17 15.

Work out the length of time this journey took.
Give your answer in hours and minutes.

.... h .... min [1]

(b) One day, the adult train fare from Amsterdam to Brussels is 75 euros.

(i) The fare for a child is $\frac{3}{5}$ of the adult fare.

Work out the child fare for the journey.

.... euros [1]

(ii) On another day the adult fare of 75 euros is increased by 12%.

Work out the adult fare on this day.

.... euros [2]

(c) The train from Amsterdam to Brussels travels 180 km in 2 hours 15 minutes.

Work out the average speed of the train in kilometres per hour.

....km/h [2]

16. 0607_w22_qp_31 Q: 4

(a) Write the number seven thousand and twenty-four in figures.

.... [1]

(b) Find the value of

    (i) 8.4^2 ,

.... [1]

    (ii) $\sqrt[3]{163}$.
       Give your answer correct to 2 significant figures.

.... [2]

(c) Work out.

    (i) $\dfrac{16.28+9.2}{14.1-9.2}$

.... [1]

    (ii) $\dfrac{-18.6}{-3.1}$

.... [1]

(d) **(i)** Write down a square number between 30 and 40.

.... [1]

    (ii) Write down a prime number between 30 and 40.

.... [1]

17. 0607_m21_qp_32 Q: 1

(a)   6   13   21   25   27   38   39   41   43   49

From the list above, write down

  (i)   an even number,

.... [1]

 (ii)   a factor of 50,

.... [1]

(iii)   a multiple of 7,

.... [1]

 (iv)   a triangle number,

.... [1]

  (v)   a cube number,

.... [1]

 (vi)   a prime number.

.... [1]

(b) Find $\sqrt[3]{421}$.
Give your answer correct to 4 significant figures.

.... [2]

(c) Work out $\dfrac{41}{27 \times 49}$.
Give your answer correct to 5 decimal places.

.... [2]

18. 0607_m21_qp_32 Q: 2

Here is the price list in a restaurant.
You can choose a 1-course meal or a 2-course meal or a 3-course meal.

1-course meal	$28
2-course meal	$35
3-course meal	$42
Coffee or Tea	$3

Anna and Alexa eat a meal in this restaurant.

Anna has a 3-course meal and a cup of coffee.
Alexa has a 2-course meal and two cups of tea.

(a) Work out how much this costs altogether.

$ .... [2]

(b) They pay a service charge of 15% of this cost.

   (i) Work out the total cost including the service charge.

$ .... [2]

   (ii) They each pay half of the total cost including the service charge.

   Work out how much they each pay.

$ .... [1]

Appendix A

Answers

1. 0607_m23_ms_32 Q: 1

Question	Answer	Marks	Partial Marks
(a)(i)	122 or 124 or 126	1	
(a)(ii)	121	1	
(a)(iii)	125	1	
(a)(iv)	126	1	
(a)(v)	127	1	
(b)(i)	1.537	2	**B1** for 1.5365… or *their* answer to more than 3 decimal places correctly rounded to 3 decimal places.
(b)(ii)	3400	2	**B1** for 3368…. or *their* answer correctly rounded to the nearest hundred.

2. 0607_m23_ms_32 Q: 3

Question	Answer	Marks	Partial Marks
(a)	Nine million, six hundred [and] nine thousand, nine hundred	1	
(b)	31 100	1	
(c)(i)	60 cao	1	
(c)(ii)	279 900	3	**M2** for $\dfrac{their\,60}{100} \times their\,31100 \times 15$ oe or **M1** for $\dfrac{their\,60}{100} \times their\,31100$ or $15 \times their\,31100$ oe

3. 0607_m23_ms_32 Q: 4

Question	Answer	Marks	Partial Marks
(a)(i)	$\frac{2}{100} \times 600$	1	or an equivalent method
(a)(ii)	784.98	2	**M1** for $600 - 12$ soi by 588

Question	Answer	Marks	Partial Marks
(b)	279.98	2	**FT** *their* **(a)(ii)** $- 505$ **M1** for $150 + 225 + 130$ soi by 505
(c)	207.85	1	**FT** $\frac{their(\boldsymbol{b})}{1.347}$

4. 0607_s23_ms_31 Q: 2

Question	Answer	Marks	Partial Marks
(a)	80	3	**B1** for 100 **B1** for 20
(b)	6 with 0.5[0] change	3	**M1** for $20 \div 3.25$ oe **A1** for 6 If 0 scored, **SC1** for number of bottles less than 6 with correct change
(c)	[oil =] 625 [vinegar =] 375	3	**B1** for 1000 soi **M1** for $\frac{their\,1000}{5+3}$ soi by figs 125
(d)	5600	3	**B2** for 600 or **M2** for $\frac{5000 \times 4 \times 3}{100} + 500$ or **M1** for $\frac{5000 \times 4 \times [3]}{100}$

5. 0607_s23_ms_31 Q: 5

Question	Answer	Marks	Partial Marks
(a)	0.069 0.6 0.608 0.63	2	**B1** for three in correct order when one is covered up
(b)	5.39 cao	2	**B1** for 5.385[1…] or for *their* answer to more than 3sf correctly rounded to 3sf
(c)(i)	3.5×10^{-5} cao	1	
(c)(ii)	$5.[0] \times 10^{7}$ cao	2	**B1** for 50 000 000 or 0.5×10^{8}

6. 0607_s23_ms_32 Q: 1

Question	Answer	Marks	Partial Marks
(a)	$365 \times 24 \times 60 \times 60[=]31536000$	**M2**	**M1** for $[365 \times] 24 \times 60$ or $[365 \times] 60 \times 60$
(b)(i)	Thirty-one million, five hundred [and] thirty-six thousand	**1**	
(b)(ii)	$3.15[36] \times 10^7$	**1**	
(c)	1, 7, 49	**2**	**B1** for 2 correct factors and no extras or for 3 correct and 1 extra
(d)	25	**1**	
(e)	24.576	**2**	**M1** for 24.5764… or for *their* answer to more than 3dp correctly rounded to 3dp.
(f)	−2.681	**2**	**M1** for $[-]2.680[6]$ or for *their* answer to more than 4sf correctly rounded to 4sf
(g)	5.06 5.56 5.6 5.65	**2**	**B1** for 3 correct when one is covered up

7. 0607_s23_ms_32 Q: 3

Question	Answer	Marks	Partial Marks
(a)	13.1 to 13.2	**2**	**M1** for $\dfrac{10}{0.76}$ oe
(b)(i)	134	**2**	**M1** for $[50+]3 \times 28$
(b)(ii)	Company A: $50 + 13 \times 28 = 414$	**M1**	
	Company B: $2 \times 200 = 400$	**M1**	
	Company B clearly indicated as cheapest	**A1**	Dep on at least **M1** If 0 scored, **SC1** for *their* correct conclusion after seeing a price for *A* and *B*

8. 0607_s23_ms_33 Q: 1

Question	Answer	Marks	Partial Marks
(a)(i)	$\dfrac{4}{15}$ oe	1	
(a)(ii)	109	2	**B1** for 125 or 16
(b)	$2 \times 2 \times 2 \times 2 \times 5$ or $2^4 \times 5$	2	**M1** for repeated division of 80 or for 2 and 5 seen as factors
(c)	4.44×10^9 or 4.442×10^9	2	**B1** for 4 442 000 000
(d)	0.00039	1	

9. 0607_s23_ms_33 Q: 8

Question	Answer	Marks	Partial Marks
(a)	[Atif =] 1500 [Faiza=] 3500	2	**M1** for $\dfrac{5000}{3+7}$ soi by 500
(b)	1925	2	**B1** for 275
(c)	45.6[0]	2	**M1** for 40×0.14 oe soi by 5.6[0]

10. 0607_m22_ms_32 Q: 6

Question	Answer	Marks	Partial Marks
(a)	9 : 7	3	**B1** for [boys=]420 **M1** for 540 : *their* (960 − 540) or *their* (960 − 540) : 540 cancelled correctly at least once If 0 scored, **SC1** for 9 : 16
(b)	171	3	**M1** for $\dfrac{2 \times 540}{3}$ oe **M1** for $0.45 \times their420$ oe

11. 0607_s22_ms_31 Q: 1

Question	Answer	Marks	Partial Marks
(a)	Twenty thousand, two hundred [and] two	**1**	
(b)	5	**1**	
(c)	1, 2, 3, 6, 7, 14, 21, 42	**2**	**B1** for 4 to 7 correct factors with no incorrect or 8 correct factors with one extra
(d)	17 or 19	**1**	
(e)(i)	7832.95	**1**	
(e)(ii)	7833	**1**	
(e)(iii)	7800	**1**	
(f)	$(5-3) \times 4 + 1 = 9$	**1**	
(g)	52.8[0]	**2**	**M1** for $550 \times \dfrac{3.2}{100}$ [×3] implied by 17.6[0]

12. 0607_s22_ms_31 Q: 12

Question	Answer	Marks	Partial Marks
(a)	15 [min] 36 [sec]	**3**	**M2** for $\dfrac{1.3}{5} \times 60$ oe, soi by 15.6 or **M1** for $\dfrac{1.3}{5}$ soi by 0.26
(b)(i)	$\dfrac{12}{60} = 0.2$	**1**	
(b)(ii)	15	**2**	**M1** for $\dfrac{1.3}{5.2}$ soi by 0.25 or $\dfrac{5.2}{60}$ soi by 0.0866… oe

13. 0607_s22_ms_32 Q: 1

Question	Answer	Marks	Partial Marks
(a)(i)	22 or 24 or 26 or 28	1	
(a)(ii)	24	1	
(a)(iii)	25	1	
(a)(iv)	23 or 29	1	
(b)(i)	29	1	
(b)(ii)	216	1	
(c)	9.38	2	**B1** for 9.376 to 9.377

14. 0607_s22_ms_32 Q: 5

Question	Answer	Marks	Partial Marks
(a)(i)	420, 660, 893, 1063, 1084	1	
(a)(ii)	1060	1	
(a)(iii)	One thousand [and] eighty four	1	
(b)	[C =] 39 [Z =] 21	2	**B1** for each or **M1** for 60÷20 soi

15. 0607_s22_ms_32 Q: 6

Question	Answer	Marks	Partial Marks
(a)(i)	13 25 or 1 25 pm	1	
(a)(ii)	2h 25m	1	
(b)(i)	45	1	
(b)(ii)	84	2	**M1** for $75 \times \dfrac{12}{100}$ oe
(c)	80	2	**M1** for 180 ÷ *their* time

16. 0607_w22_ms_31 Q: 4

Question	Answer	Marks	Partial Marks
(a)	7024	1	
(b)(i)	70.56	1	

Question	Answer	Marks	Partial Marks
(b)(ii)	5.5	**2**	**B1** for 5.46…
(c)(i)	5.2	**1**	
(c)(ii)	6	**1**	
(d)(i)	36	**1**	
(d)(ii)	31 or 37	**1**	

17. 0607_m21_ms_32 Q: 1

Question	Answer	Marks	Partial Marks
(a)(i)	6 or 38	**1**	
(a)(ii)	25	**1**	
(a)(iii)	21 or 49	**1**	
(a)(iv)	6 or 21	**1**	
(a)(v)	27	**1**	
(a)(vi)	13 or 41 or 43	**1**	
(b)	7.495	**2**	**B1** for 7.4948… If 0 scored, **SC1** for *their* value greater than 4 sf correctly rounded to 4 sf.
(c)	0.03099	**2**	**B1** for 0.30990… If 0 scored, **SC1** for *their* value greater than 5 dp correctly rounded to 5 dp.

18. 0607_m21_ms_32 Q: 2

Question	Answer	Marks	Partial Marks
(a)	86	**2**	**B1** for $42 + 3$ soi by 45 or $35 + 2\times3$ soi by 41
(b)(i)	98.9[0]	**2**	**M1** for $\dfrac{15}{100}\times$ *their* **(a)** oe
(b)(ii)	49.45	**1**	**FT** *their* **(b)(i)**