

TOPICAL PAST PAPER WORKBOOK

IGCSE Mathematics (0580)
Paper 2 & 4 [Extended]

Years: 2020 - 2021



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Introduction

Each topical past paper book consists of hundreds of questions and their answer schemes, in the form of worksheets. Questions are assigned to each chapter according to their corresponding topic. Topics, in turn, are based on the items of the latest Cambridge IGCSE or AS/A level syllabus content. This book's specifications are as follows:

Title: IGCSE Mathematics (0580) Paper 2 and 4 [Extended] Topical Past Paper Workbook

Subtitle: Exam Practice Worksheets With Answer Scheme

Examination board: Cambridge Assessment International Education (CAIE)

Subject code: 0580

Years covered: 2020 – 2021

Paper(s): 2 & 4 (Extended)

Number of pages: 324

Number of questions: 245

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Chapter 1

Numbers

1. 0580_m21_qp_22 Q: 11

Find the highest common factor (HCF) of 36 and 84.

..... [2]

2. 0580_s21_qp_22 Q: 4

Write down an expression for the range of k consecutive integers.

..... [1]

3. 0580_s21_qp_22 Q: 7

(a) Complete these statements.

The reciprocal of 0.2 is

A prime number between 90 and 100 is [2]

(b)

$\frac{7}{5}$ 0.6 $\sqrt{7}$ 8 $\sqrt{9}$

From this list, write down an irrational number.

..... [1]

4. 0580_s21_qp_23 Q: 1

Write down the number that is 23 less than -1.6 .

..... [1]

5. 0580_s21_qp_23 Q: 7

12 18 29 49 91 125

From the list of numbers, write down

(a) a cube number,

..... [1]

(b) a prime number.

..... [1]

6. 0580_w20_qp_21 Q: 8

(a) 1, 2, 3, 5 and 7 are all common factors of two numbers.

Write down the digit that the two numbers must end in.

..... [1]

(b) Write 84 as a product of its prime factors.

..... [2]

7. 0580_w20_qp_22 Q: 1

Write two hundred thousand and seventeen in figures.

..... [1]

8. 0580_w20_qp_23 Q: 1

Write down the cube number that is greater than 50 but less than 100.

..... [1]

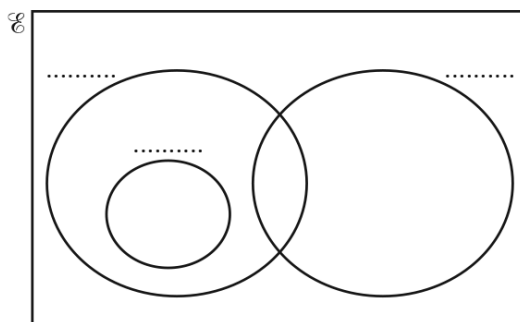
9. 0580_s21_qp_22 Q: 12

- (a) $\mathcal{E} = \{\text{integers greater than 2}\}$
 $A = \{\text{prime numbers}\}$
 $B = \{\text{odd numbers}\}$
 $C = \{\text{square numbers}\}$

(i) Describe the type of numbers in the set $B' \cap C$.

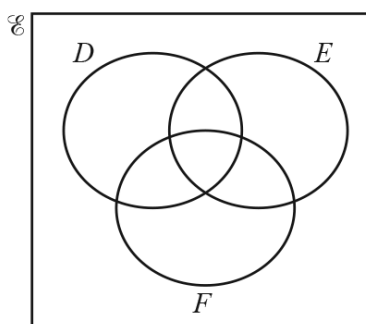
..... [1]

(ii) Complete the set labels on the Venn diagram.



[1]

(b)

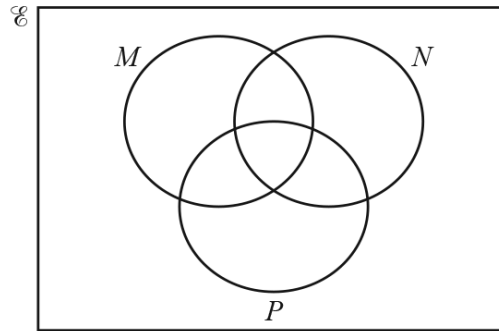


Shade the region $D' \cup (E \cap F)$.

[1]

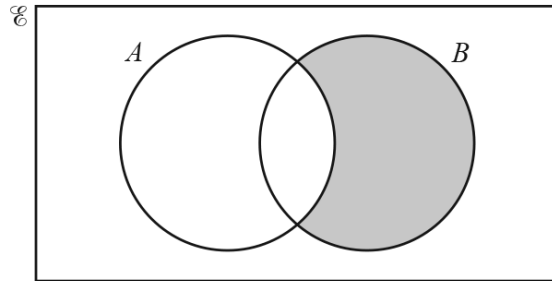
10. 0580_w20_qp_21 Q: 19

In this Venn diagram, shade the region $M'UNUP$.



[1]

11. 0580_w20_qp_23 Q: 13



Use set notation to describe the shaded region.

..... [1]

12. 0580_s21_qp_22 Q: 2

Calculate $\sqrt[4]{0.0256}$.

..... [1]

13. 0580_w20_qp_23 Q: 2

Calculate. $\frac{4}{\sqrt{0.0025}}$

..... [1]

14. 0580_m21_qp_22 Q: 8

Write $0.\dot{3}\dot{7}$ as a fraction.

..... [1]

15. 0580_s21_qp_22 Q: 11

Write $0.\dot{0}\dot{4}$ as a fraction in its simplest form.

..... [1]

16. 0580_s21_qp_23 Q: 2

Write as a fraction in its simplest form.

(a) 72%

..... [1]

(b) 0.004

..... [1]

17. 0580_w20_qp_21 Q: 13

Write the recurring decimal $0.1\dot{7}$ as a fraction in its simplest form.
You must show all your working.

..... [3]

18. 0580_m21_qp_22 Q: 9

Calculate $4.8 \times 10^6 + 3.7 \times 10^7$.
Give your answer in standard form.

..... [1]

19. 0580_s21_qp_22 Q: 10

(a) Write 0.006 54 in standard form.

..... [1]

(b) The number 1.467×10^{102} is written as an ordinary number.

Write down the number of zeros that follow the digit 7.

..... [1]

20. 0580_s21_qp_23 Q: 20

Simplify $2.1 \times 10^p + 2.1 \times 10^{p-1}$.
Give your answer in standard form.

..... [2]

Appendix A

Answers

1. 0580_m21_ms_22 Q: 11

	Answer	Mark	Partial Marks
	12	2	M1 for $2^2 \times 3^2$ and $2^2 \times 3 \times 7$ or for $2 \times 2 \times 3$ final answer or B1 for 2, 3, 4 or 6 as final answer

2. 0580_s21_ms_22 Q: 4

	Answer	Mark	Partial Marks
	$k - 1$	1	

3. 0580_s21_ms_22 Q: 7

	Answer	Mark	Partial Marks
(a)	$\frac{5}{97}$	2	B1 for each
(b)	$\sqrt{7}$	1	

4. 0580_s21_ms_23 Q: 1

	Answer	Mark	Partial Marks
	-24.6	1	

5. 0580_s21_ms_23 Q: 7

	Answer	Mark	Partial Marks
(a)	125	1	
(b)	29	1	

6. 0580_w20_ms_21 Q: 8

	Answer	Mark	Partial Marks
(a)	0	1	
(b)	$2^2 \times 3 \times 7$ or $2 \times 2 \times 3 \times 7$	2	B1 for 2, 2, 3, 7

7. 0580_w20_ms_22 Q: 1

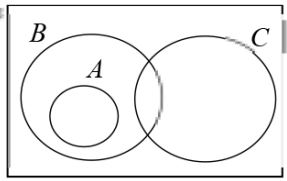
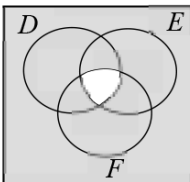
	Answer	Mark	Partial Marks
	200 017	1	

8. 0580_w20_ms_23 Q: 1

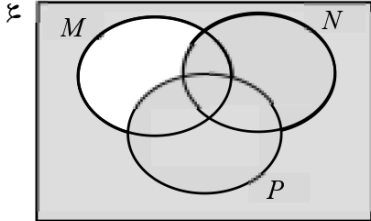
	Answer	Mark	Partial Marks
	64	1	

9. 0580_s21_ms_22 Q: 12

	Answer	Mark	Partial Marks
(a)(i)	Even square numbers oe	1	

	Answer	Mark	Partial Marks
(a)(ii)		1	
(b)		1	

10. 0580_w20_ms_21 Q: 19

	Answer	Mark	Partial Marks
		1	

11. 0580_w20_ms_23 Q: 13

	Answer	Mark	Partial Marks
	$A' \cap B$	1	

12. 0580_s21_ms_22 Q: 2

	Answer	Mark	Partial Marks
	0.4 or $\frac{2}{5}$	1	

13. 0580_w20_ms_23 Q: 2

	Answer	Mark	Partial Marks
	80	1	

14. 0580_m21_ms_22 Q: 8

	Answer	Mark	Partial Marks
	$\frac{37}{99}$ oe fraction	1	

15. 0580_s21_ms_22 Q: 11

	Answer	Mark	Partial Marks
	$\frac{4}{99}$ cao	1	

16. 0580_s21_ms_23 Q: 2

	Answer	Mark	Partial Marks
(a)	$\frac{18}{25}$ cao	1	
(b)	$\frac{1}{250}$ cao	1	

17. 0580_w20_ms_21 Q: 13

	Answer	Mark	Partial Marks
	17.77... – 1.77... oe	M1	M1 for correct working shown
	$\frac{8}{45}$ cao	A2	B1 for $\frac{16}{90}$ oe seen

18. 0580_m21_ms_22 Q: 9

	Answer	Mark	Partial Marks
	4.18×10^7 cao	1	

19. 0580_s21_ms_22 Q: 10

	Answer	Mark	Partial Marks
(a)	6.54×10^{-3}	1	
(b)	99	1	

20. 0580_s21_ms_23 Q: 20

	Answer	Mark	Partial Marks
	2.31×10^p	2	B1 for $21 \times 10^{p-1}$ or 0.21×10^p or answer with figs 231

21. 0580_w20_ms_22 Q: 14

	Answer	Mark	Partial Marks
	2.03×10^{201}	2	B1 for figs 203 or $[0].03 \times 10^{201}$ or 200×10^{199}