IGCSE (9-1) Edexcel Past Papers

MATHEMATICS A

Paper 2H, 2HR

2020 — 2025

1 – (4MA1/2H_Summer_2020_Q4) – *Numbers And The Number System*

Andreas, Isla and Paulo share some money in the ratios 3 : 2 : 5

The **total** amount of money that Isla and Paulo receive is £76 more than the amount of money that Andreas receives.

Andreas buys a video game for £48.50 with some of his share of the money.

Work out how much money Andreas has left from his share of the money when he has bought the video game.

£.....

(Total for Question is 4 marks)

2 - (4MA1/2H_Summer_2020_Q5) - *Numbers And The Number System*

Himari's annual salary is 3 130 000 Japanese Yen (JPY).
She gets a salary increase of 4%

(a) Work out Himari's salary after this increase.

.....JPY
(3)

Kaito bought a car.
The value of the car when Kaito bought it was 750 000 JPY.
At the end of each year, the value of his car had depreciated by 15%

(b) Work out the value of Kaito's car at the end of 3 years.
Give your answer correct to the nearest JPY.

.....JPY
(3)

3 - (4MA1/2H_Summer_2020_Q13) - *Numbers And The Number System*

Use algebra to show that $0.68\dot{1} = \frac{15}{22}$

(Total for Question is 2 marks)

4 - (4MA1/2HR_Summer_2020_Q2) - *Numbers And The Number System*

Write 880 as a product of powers of its prime factors.
Show your working clearly.

.....

(Total for Question is 3 marks)

5 - (4MA1/2HR_Summer_2020_Q3) - *Numbers And The Number System*

(a) Write 2.46×10^6 as an ordinary number.

.....

(1)

(b) Write 0.000 74 in standard form.

.....

(1)

(c) Work out $(5.6 \times 10^6) + (2.3 \times 10^5)$

.....

(2)

6 - (4MA1/2HR_Summer_2020_Q5) - *Numbers And The Number System*

The length of a book is 33.8 cm, correct to one decimal place.

(a) Write down the lower bound of the length of the book.

..... cm

(1)

(b) Write down the upper bound of the length of the book.

..... cm

(1)

ANSWERS

1 – (4MA1/2H_Summer_2020_Q4) – *Numbers And The Number System*

eg $76 \div (5 + 2 - 3)$ oe (= 19) or $5x + 2x - 3x = 76$ **and** $x = 76 \div (5 + 2 - 3)$ (=19) oe			M1 For a correct method to find the value of 1 share
$3 \times$ "19" (= 57)			M1
"57" – 48.5(0)			M1
	8.5(0)	4	A1
			Total 4 marks

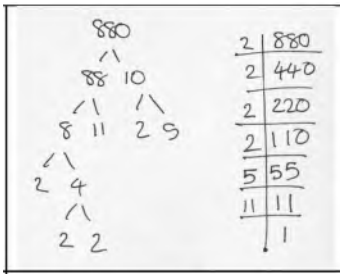
2 – (4MA1/2H_Summer_2020_Q5) – *Numbers And The Number System*

a	$1.04 \times 3\,130\,000$ oe				M2 complete method to increase salary by 4% M1 for $0.04 \times 3\,130\,000$ oe (= 125 200)	
			3 255 200	3	A1	
b	for $0.15 \times 750\,000$ oe (=112 500) **or** $0.85 \times 750\,000$ oe (=637 500)	**OR**			M1 For method to find depreciation for 1 year or value after 1 year	**or** M2 for $750\,000 \times 0.85^3$ (= 460 593.75) **or** $750\,000 \times 0.85^4$ (= 391 504.69) (M1 for $750\,000 \times 0.85^2$ (= 541 875)
	"637 500" $\times$ 0.85 oe (= 541 875) "541 875" $\times$ 0.85 oe(= 460 593.75)	$750\,000 \times 0.85^3$			M1 for completing method	
			460 594	3	A1 accept 460 593 – 460 594	
					SC: if no other marks gained award M1 for $0.55 \times 750\,000$ oe **(**= 412 500) **or** $0.45 \times 750\,000$ oe **(**= 337 500) accept (1 – 0.15) as equivalent to 0.85 throughout	
						Total 6 marks

3 – (4MA1/2H_Summer_2020_Q13) – *Numbers And The Number System*

e.g. $x = 0.6\dot{8}\dot{1}$ and $100x = 68.\dot{1}\dot{8}$ **or** $10x = 6.\dot{8}\dot{1}$ and $1000x = 681.\dot{8}\dot{1}$			M1 e.g. two decimals that when subtracted give a finite decimal (must show understanding of recurring figures by 'dot' or at least 2 lots of 18 or 81 after the decimal point). Algebra required, use of any letter.
$99x = 67.5$, $x = \frac{67.5}{99} = \frac{15}{22}$ **or** $990x = 675$, $x = \frac{675}{990} = \frac{15}{22}$ oe	show	2	A1 dep for completing the 'show that' arriving at given answer from correct working.
			Total 2 marks

4 – (4MA1/2HR_Summer_2020_Q2) – *Numbers And The Number System*

		3	M1	for continual prime factorisation (at least two correct steps anywhere) or at least two stages of a factor tree, or table, correct. eg if first stage wrong, 800×80 then $800 = 80 \times 10$ and $80 = 40 \times 2$ would count as 2 correct steps.
			M1	dep M1 for a fully correct factor tree or a list (2,2,2,2,5,11) condone inclusion of 1's on branch ends. **or** $2 \times 2 \times 2 \times 2 \times 5 \times 11$
	$2^4 \times 5 \times 11$		A1	dep M2 for $2^4 \times 5 \times 11$ (with working seen)
				Total 3 marks

5 – (4MA1/2HR_Summer_2020_Q3) – *Numbers And The Number System*

(a)		2 460 000	1	B1	accept 2,460,000 or 246 0000
(b)		7.4×10^{-4}	1	B1	
(c)			2	M1	for correct value not in standard form e.g. 58.3×10^5 or 583×10^4 or 0.583×10^7 oe
		5 830 000		A1	5 830 000 or 5.83×10^6 do not isw.
					Total 4 marks

6 – (4MA1/2HR_Summer_2020_Q5) – *Numbers And The Number System*

(a)		33.75	1	B1	oe eg 33.750
(b)		33.85	1	B1	allow $33.84\dot{9}$ or 33.849^r or "33.8499…" do NOT allow 33.879 without indication of recurring "9"
					Total 2 marks

7 – (4MA1/2HR_Summer_2020_Q6) – *Numbers And The Number System*

$\frac{70\times40}{0.02}$ or $\frac{68\times40}{0.02}$ or $\frac{70\times43}{0.02}$ or $\frac{68\times43}{0.02}$		2	M1	for a correct expression using a suitable approximation. 0.02 is the only acceptable denominator.
$\frac{70\times40}{0.02} = 140\,000$ **or** $\frac{68\times40}{0.02} = \frac{2720}{0.02} = 136\,000$ **or** $\frac{70\times43}{0.02} = \frac{3010}{0.02} = 150\,500$ **or** $\frac{68\times43}{0.02} = \frac{2924}{0.02} = 146\,200$	Correct figures		A1	If student says 'no' then do not award the A mark rounded expression and evaluated answer required Intermediate step required unless rounded to 1sf For each, ×50 (oe) may be seen in intermediate step. eg $\frac{68\times40}{0.02} = 2720\times50 = 136\,000$
				Total 2 marks