IGCSE (9-1) Edexcel Past Papers

MATHEMATICS A

Paper 2H, 2HR

2019 — 2023

1 - (4MA1/2H_Summer_2019_Q5) - *Numbers And The Number System*

Josh buys and sells books for a living.

He buys 120 books for £4 each.

He sells $\frac{1}{2}$ of the books for £5 each.

He sells 40% of the books for £7 each.
He sells the rest of the books for £8 each.

(a) Calculate Josh's percentage profit.

....%

(5)

One book that Josh owns had a value of £15 on the 1st May 2019
The value of this book had increased by 20% in the last year.

(b) Find the value of the book on the 1st May 2018

£..

(3)

(Total for Question 5 is 8 marks)

2 - (4MA1/2H_Summer_2019_Q7) - *Numbers And The Number System*

30 students in a class sat a Mathematics test.
The mean mark in the test for the 30 students was 26.8

13 of the 30 students in the class are boys.
The mean mark in the test for the boys was 25

Find the mean mark in the test for the girls.
Give your answer correct to 3 significant figures.

....

(Total for Question 7 is 3 marks)

3 - (4MA1/2H_Summer_2019_Q8) - *Numbers And The Number System*

Change a speed of x kilometres per hour into a speed in metres per second.
Simplify your answer.

.... m/s

(Total for Question 8 is 3 marks)

3 - (4MA1/2H_Summer_2019_Q8) - *Numbers And The Number System*

4 - (4MA1/2H_Summer_2019_Q11) - *Numbers And The Number System*

The table gives the average crowd attendance per match for each of five football clubs for one season.

Football club	Average crowd attendance
Monaco	9.5×10^3
Chelsea	4.2×10^4
Juventus	3.9×10^4
Oxford United	8.3×10^3
Barcelona	7.7×10^4

(a) Find the difference between the average crowd attendance for Barcelona and the average crowd attendance for Monaco.
Give your answer in standard form.

....

(2)

Antonio says,

"The average crowd attendance for Chelsea is approximately 50 times that for Oxford United."

(b) Is Antonio correct?
You must give a reason for your answer.

....

....

....

(2)

During last season the cost of a ticket to watch Seapron United increased by 15% and then decreased by 8%

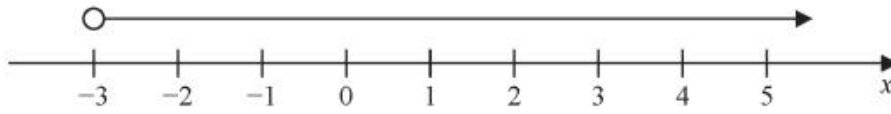(c) Work out the overall percentage change in the cost of a ticket to watch Seapron United during last season.

.... %

(2)

(Total for Question 11 is 6 marks)

5 - (4MA1/2HR_Summer_2019_Q1) - *Numbers And The Number System*

(a)

Write down the inequality shown on the number line.

....

(1)

(b) Solve the inequality $4y - 13 \leqslant y + 8$

....

(2)

(Total for Question 1 is 3 marks)

5 - (4MA1/2HR_Summer_2019_Q1) - *Numbers And The Number System*

6 - (4MA1/2HR_Summer_2019_Q2) - *Numbers And The Number System*

Show that $5\frac{2}{3} - 2\frac{3}{4} = 2\frac{11}{12}$

(Total for Question 2 is 3 marks)

6 - (4MA1/2HR_Summer_2019_Q2) - *Numbers And The Number System*

ANSWERS

1 - (4MA1/2H_Summer_2019_Q5) - *Numbers And The Number System*

(a)	$4 \times 120\ (= 480)$				M1
	e.g. $120 \div 2 \times 5\ (= 300)$ **or** $120 \times 0.4 \times 7\ (= 336)$ **or** $(120 - '60' - '48') \times 8\ (= 96)$ **or** $120 \times 0.1 \times 8\ (= 96)$				M1 for a method to find the income for one of the selling prices
	e.g. $(120 \div 2 \times 5) + (120 \times 0.4 \times 7) +$ $((120 - '60' - '48') \times 8)\ (= 732)$ **or** $(120 \div 2 \times 5) + (120 \times 0.4 \times 7) +$ $(120 \times 0.1 \times 8)\ (= 732)$ **or** $'300' + '336' + '96'\ (= 732)$				M1 for a complete method to find the total income
	e.g. $\dfrac{'732' - '480'}{'480'} \times 100$ **or** $'252' \div '480' \times 100$ **or** $\left(\dfrac{'732'}{'480'} \times 100\right) - 100$ or $152.5 - 100$ **or** $\left(\dfrac{'732'}{'480'} - 1\right) \times 100$ or 0.525×100				M1 for a complete method to find the percentage profit
		52.5	5		A1 accept 53
(b)	e.g. $1 + 0.2\ (= 1.2)$ **or** $100(\%) + 20(\%)\ (= 120(\%))$ **or**				M1
	$\dfrac{15}{120}\ (= 0.125)$ oe				
	e.g. $15 \div 1.2$ **or** $15 \div 120 \times 100$ **or** $15 \times 100 \div 120$				M1 dep
		12.5(0)	3		A1 accept (£)12.5, (£)12.50p, 1250p if the £ sign is crossed out

Total 8 marks

ALT	(a)	$4 \times 120\ (= 480)$			M1
		e.g. $120 \div 2 \times 1\ (= 60)$ **or** $120 \times 0.4 \times 3\ (= 144)$ **or** $(120 - '60' - '48') \times 4\ (= 48)$ **or** $120 \times 0.1 \times 4\ (= 48)$			M1 for a method to find the profit of one of the books
		e.g. $(120 \div 2 \times 1) + (120 \times 0.4 \times 3) +$ $((120 - '60' - '48') \times 4)\ (= 252)$ **or** $(120 \div 2 \times 1) + (120 \times 0.4 \times 3) +$ $(120 \times 0.1 \times 4)\ (= 252)$ **or** $'60' + '144' + '48'\ (= 252)$			M1 for a complete method to find the total profit
		$'252' \div '480' \times 100$ oe			M1 for a complete method to find the percentage profit
			52.5	5	A1 accept 53
	(b)	e.g. $1 + 0.2\ (= 1.2)$ **or** $100(\%) + 20(\%)\ (= 120(\%))$ **or** $\dfrac{15}{120}\ (= 0.125)$ oe			M1
		e.g. $15 \div 1.2$ **or** $15 \div 120 \times 100$ **or** $15 \times 100 \div 120$			M1 dep
			12.5(0)	3	A1 accept (£)12.5, (£)12.50p, 1250p if the £ sign is crossed out

Total 8 marks

2 - (4MA1/2H_Summer_2019_Q7) **-** *Numbers And The Number System*

e.g. 30 × 26.8 (= 804) **or** 13 × 25 (= 325) **or** (26.8 − 25) × 30 **or** 1.8 × 30			M1 for finding the total marks for the boys or the total test marks
e.g. (30 × 26.8 − 13 × 25) ÷ (30 − 13) (= 28.1764...) **or** ('804' − '325') ÷ (30 − 13) (= 28.1764...) **or** ('804' − '325' ÷ 17) (= 28.1764...) **or** ((26.8 − 25) × 30) ÷ 17 + 25 (= 28.1764...) **or** '1.8' × 30 ÷ 17 + 25 (= 28.1764...)			M1 for a complete method to find the mean mark for the girls
	28.2	3	A1 accept 28.15 – 28.2 (accept without working) (Accept 28 from complete working)
			Total 3 marks

3 - (4MA1/2H_Summer_2019_Q8) **-** *Numbers And The Number System*

$(x) × 1000$ **or** $(x) ÷ 60$ **or** $(x) ÷ 60 ÷ 60$ **or** $(x) × 1000 ÷ 60$ oe			M1 for at least **one** of × 1000 **or** ÷ 60 **or** $\frac{5}{18}$ oe
$x × \dfrac{1000}{60 × 60}$ oe			M1 (dep) for a complete correct method
	$\dfrac{5}{18}x$	3	A1 accept $0.2\dot{7}x$ or $0.2\overline{7}x$ or $\dfrac{x}{3.6}$ or $\dfrac{1}{3.6}x$
			Total 3 marks

4 - (4MA1/2H_Summer_2019_Q11) **-** *Numbers And The Number System*

(a)	$±(7.7 × 10^4 − 9.5 × 10^3)$ **or** $±(7.7 × 10^4 − 0.95 × 10^4)$ **or** $±(77\,000 − 9\,500)$ **or** $±67\,500$ oe		M1 for clearly subtracting the correct values
	$6.75 × 10^4$	2	A1 allow $−6.75 × 10^4$ allow $±6.8 × 10^4$
(b)	$(8.3 × 10^3) × 50$ (= 415 000 or 4.15 × 10^5) **or** $(4.2 × 10^4) ÷ 50$ (= 840 or 8.4 × 10^2) **or** $(4.2 × 10^4) ÷ (8.3 × 10^3)$ (= 5(.060...))		M1 for a relevant calculation
	No supported by correct comparable figures in the same form	2	A1 for NO **and** 415 000 and 42 000 **or** NO **and** $4.15 × 10^5$ NO **and** 840 and 8 300 **or** NO **and** $8.4 × 10^2$ NO **and** 5(.060...)
(c)	1.15 × 0.92 (= 1.058) oe **or** 105.8 $\dfrac{n × 1.15 × 0.92}{n}$ where n is a number or variable e.g. $\dfrac{200 × 1.15 × 0.92}{200}$		M1 condone $x × 1.15 × 0.92$ oe
	5.8	2	A1 NB. −5.8 (M1A0) decrease of 5.8% (M1A0)
			Total 6 marks

5 - (4MA1/2HR_Summer_2019_Q1) - *Numbers And The Number System*

(a)		$x > -3$	1	B1	Accept $-3 < x$
(b)	$4y - y \leq 8 + 13$		2	M1	Arranging y's on one side and the numbers on the other side. (allow $4y - y = 8 + 13$ oe or $4y - y < 8 + 13$ oe or $4y - y > 8 + 13$ oe or $4y - y \geq 8 + 13$ oe)
		$y \leq 7$ oe		A1	Allow $y \leq 21/3$

Total 3 marks

6 - (4MA1/2HR_Summer_2019_Q2) - *Numbers And The Number System*

$\frac{17}{3}(-)\frac{11}{4}$ or $5\frac{8}{12}(-)2\frac{9}{12}$		3	M1	Sight of $\frac{17}{3}$ and $\frac{11}{4}$ or $5\frac{8}{12}$ and $2\frac{9}{12}$
$\frac{68}{12} - \frac{33}{12}$ or $4\frac{20}{12} - 2\frac{9}{12}$			M1	Or $\frac{68n}{12n} - \frac{33n}{12n}$
$\frac{35}{12} = 2\frac{11}{12}$			A1	Dep on M2
Alt:				
$3 (+)(\frac{2}{3} - \frac{3}{4})$			M1	
$3 (+)(\frac{8}{12} - \frac{9}{12})$			M1	
$3 - \frac{1}{12} = 2\frac{11}{12}$			A1	Dep on M2
Alt:				
$4\frac{5}{3}(-)2\frac{3}{4}$			M1	
$2 (+)(\frac{5}{3} - \frac{3}{4})$			M1	
$2 (+)(\frac{20}{12} - \frac{9}{12})$			M1	
$= 2\frac{11}{12}$			A1	Dep on M2

Total 3 marks

7 - (4MA1/2HR_Summer_2019_Q7) - *Numbers And The Number System*

$55 \div (6 + 3 + 2) \{= 5\}$		3	M1	Or $\frac{6}{11} \times 55$ (= 30) or $\frac{2}{11} \times 55$ (= 10)
$(6 \times "5") - (2 \times "5")$			M1	Or M2 for Won = 30 and Lost = 10 (can be seen in a ratio 30 : 15: 10)
	20		A1	

Total 3 marks

8 - (4MA1/2HR_Summer_2019_Q8) - *Numbers And The Number System*

(a)			2	M1	$3^2 \times 5^3 \times 7$ oe or correct Venn diagram
		7875		A1	
(b)			2	M1	$3^4 \times 5^4 \times 7 \times 11$ oe or correct Venn diagram
		3 898 125		A1	

Total 4 marks

9 - (4MA1/2HR_Summer_2019_Q9) - *Numbers And The Number System*

(a)		8.4×10^5	1	B1	
(b)	$\frac{60000000}{0.08}$ or 750000000 oe (e.g 0.75 $\times 10^9$)		2	M1	M1 for 60000000 or 0.08
		7.5×10^8		A1	

Total 3 marks

10 - (4MA1/2HR_Summer_2019_Q10) - *Numbers And The Number System*

150000×0.82^3		3	M2	If not M2 then M1 for 1st year e.g 150000×0.82 (= 123000) or 150000×0.18 (= 27000) SC B1 for 150000×1.18 (= 177000) or 150000×1.18^3 (= 246454.8) or 150000×0.54 (=81000) or 150000×0.46 (= 69000)
	82705		A1	Accept 82705.2

Total 3 marks