IGCSE (9-1) Edexcel Past Papers

MATHEMATICS B

Paper 1, 1R

2020 — 2025

1 – (4MB1/1_Summer_2020_Q2) – *Number*

Show that

$$4\frac{2}{7} \div \frac{5}{21} = 18$$

(Total for Question is 2 marks)

2 - (4MB1/1_Summer_2020_Q4) - *Number*

$$A = 2^3 \times 3 \times 5^2$$
$$B = 2^2 \times 3^2 \times 5 \times 7$$

(i) Find the Lowest Common Multiple (LCM) of A and B.

.....

(1)

(ii) Find the Highest Common Factor (HCF) of A and B.

.....

(1)

3 - (4MB1/1_Summer_2020_Q5) - *Number*

The price of each sandwich in a cafe was increased by 4%
Chris bought a sandwich after the price increase for $3.64

Calculate the increase in the price of the sandwich Chris bought.

$.....

(Total for Question is 2 marks)

4 - (4MB1/1_Summer_2020_Q6) - *Number*

Given that $a : b = 3 : 5$ and that $a : c = 7 : 4$

find $a : b : c$
Give your answer in its simplest form.

$a : b : c =$ .....

(Total for Question is 2 marks)

5 - (4MB1/1_Summer_2020_Q10) - *Number*

Without using a calculator and showing your working clearly, find the value of the integer a so that

$$\sqrt{180} - \sqrt{27} - \sqrt{20} + \sqrt{147} = a(\sqrt{5} + \sqrt{3})$$

$a =$ .....

(Total for Question is 3 marks)

6 – (4MB1/1_Summer_2020_Q15) – *Number*

Akash drove from his home to his friend's house.

The distance Akash drove was 190 km, to the nearest 5 km.
His average speed for the journey was 62 km/h, to the nearest km/h.

Calculate the upper bound for the time taken by Akash to drive from his home to his friend's house.
Give your answer in hours and minutes, to the nearest minute.

..... hours ..... minutes

(Total for Question is 4 marks)

7 - (4MB1/1_Summer_2020_Q18) - *Number*

A varies directly as the square of c

$A = 950$ when $c = 5$

Calculate the value of A when $c = 7$

$A =$ .....

(Total for Question is 3 marks)

ANSWERS

1 – (4MB1/1_Summer_2020_Q2) – *Number*

$\frac{30}{7}\times\frac{21}{5}$ oe or $\frac{90}{21}\div\frac{5}{21}$ oe		2	M1 must see correct fractions for multiplying or correct fraction division both over the same common denominator	
eg $\frac{\cancel{30}^{6}}{\cancel{7}}\times\frac{\cancel{21}^{3}}{\cancel{5}}=18$ or $6\times3=18$ or $\frac{630}{35}=18$ or $\frac{90}{5}=18$	shown		A1 dep on M1 must see at least one additional stage of working after the M1	
				2

2 – (4MB1/1_Summer_2020_Q4) – *Number*

(i)		$2^3\times3^2\times5^2\times7$ or 12 600	1	B1	SC (i) 60 or $2^2\times3\times5$ and (ii) 12 600 or $2^3\times3^2\times5^2\times7$ scores B0B1	
(ii)		$2^2\times3\times5$ or 60	1	B1		
						2

3 – (4MB1/1_Summer_2020_Q5) – *Number*

$3.64\div1.04$ (=3.50) oe or $3.64\div\frac{104}{4}$ oe		2	M1 allow $\frac{3.64\times100}{104}$ NB 3.5, 3.50 or 0.14 seen from a 4% decrease do not award any marks	
	0.14		A1 NB 0.14 seen with no incorrect working score full marks.	
				2

4 – (4MB1/1_Summer_2020_Q6) – *Number*

[$a:b$ =] 21 : 35 and [$a:c$ =] 21 : 12 oe or (3 : 5) × 7 and (7 : 4) × 3		2	M1 two correct two part ratios with equal a or correct 3 part ratio but not in simplest form eg 42 : 70 : 24 or 3 : 5 : $\frac{12}{7}$ or 7 : $\frac{35}{3}$: 4	
	21 : 35 : 12		A1	
				2

5 – (4MB1/1_Summer_2020_Q10) – *Number*

$(\sqrt{180}=)\sqrt{36\times5}$ or $(\sqrt{180}=)2\sqrt{45}$ or $(\sqrt{180}=)3\sqrt{20}$ or $(180=)\ 2^2\times3^2\times5$ or $(\sqrt{147}=)\sqrt{49\times3}$ or $(147=)\ 3\times7^2$		3	M1 for clearly showing understanding of surd form must include a decomposition of either 180 or 147	
$6\sqrt{5}-3\sqrt{3}-2\sqrt{5}+7\sqrt{3}$			M1 dep at least 3 terms correct	
$4(\sqrt{5}+\sqrt{3})$	4		A1 dep on both M marks	
				3

6 – (4MB1/1_Summer_2020_Q15) – *Number*

For 192.5 or 187.5		3	M1	
For 61.5 or 62.5			M1	
"192.5" ÷ "61.5" (=3.13...)			M1 where 190 < "192.5" ≤ 195 and 61 ≤ "61.5" < 62	
	3hrs 8 mins		A1 cao	
				4