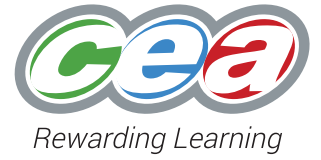


Summer 2021



Summer 2021

Alternative Arrangements: GCSE Additional Support

Mathematics: Support Papers 1 Solutions



Version 1.0



Rewarding Learning

**General Certificate of Secondary Education
Summer 2021**

GCSE Mathematics

**ADDITIONAL SUPPORT MATERIALS 1
(For use in Summer 2021)**

Solutions

GCSE MATHEMATICS 2021

The following solutions are from archived GCSE Past Papers and could be used to help teachers form judgements to provide supporting evidence in awarding Centre Determined Grades. They have **not** been compiled to be used as tests for students.

Summer 2021 Alternative Arrangements: GCSE Additional Support
Mathematics: Support Papers 1

6 (a)	2	36	
	6	240	
	10	200	MA1, MA1
	14	196	
	18	90	
	22	26	(Total = $828 \div 100 = 8.28$) M1, A1

5 (a)	$11n$	A1
(b)	$5n - 3$	M1, A1

17	5 bars correct (allow M1 for 3 bars correct) Scale, axes	M1,A1 MA1
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20	$4(2x - 1) + 9(x - 3) = 3(x - 3)(2x - 1)$ $8x - 4 + 9x - 27 = 3(2x^2 - 6x - x + 3) = 6x^2 - 21x + 9$ $6x^2 - 38x + 40 = 0$ or $3x^2 - 19x + 20 = 0$ $(3x - 4)(x - 5) = 0$ $x = 4/3$ or 5	MA1 MA1MA1 MA1 MA2 MA1
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10 (a)	44%	MA1
(b)	$58 - 30 = 28\%$	M1, A1
(c)	73%	M1, A1

7 (a) $LCM = 5 \times 5 \times 7 = 175$	M1, A1
(b) $10 \text{ am} + 175 \text{ minutes} = 12.55\text{pm}$	MA1
3 (a) (i) 0.45	M1, A1
(ii) $0.1 \times 0.1 = 0.01$	M1, A1
(b) $35000/120000 = (35/120 = 7/24)$	A1
4 (a) $2x < 7$	MA1
$x < 3.5$ (7/2)	MA1
(b) $7/3 < x \leq 5$	MA1
3, 4 and 5	MA2
1 (a) Method 1	
Oxfam $735/7 \times 4 = 420$	MA1
Save the Children $735/7 \times 3 = 315$	MA1
(b) The two answers should add up to 735	A1
Or	
(a) Method 2	
Oxfam $735/7 \times 4 = 420$	MA1
Save the Children $735 - 420 = 315$	MA1
(b) Check that 315 is $3/7$ of 735	A1
2 (a) (5, 7), (8, 7), (5, 13)	A2 (A1 for 2 vertices correct)
(b) (2, 1), (3, 1), (2, 3)	A2 (A1 for size, A1 for position)
(c) Rotation of 90 clockwise about (3, 0)	A1A1A1

- 18 (a)** $15\sqrt{3}/3 = 5\sqrt{3}$ **A1, A1**
- (b)** $5 + 3\sqrt{5} - 2\sqrt{5} - 6 = -1 + \sqrt{5}$ **A1, A1**
- (c)** $a + \sqrt{(ab)} - \sqrt{(ba)} - b = a - b$ **MA1, A1**
 $\underline{a - b}$ is rational as a and b are rational **A1**
- (d)** a or b equal to a surd or π ; both values of a and b must be stated and different **A1**

- 21** $\pi r^2 h : 4/3\pi r^3$
- $3\pi r^2 h : 4\pi r^3$ **MA1**
- h for cylinder = $2r$ for sphere
- $3\pi r^2(2r) : 4\pi r^3$
- $6\pi r^3 : 4\pi r^3$ **MA1**
- $3 : 2$ **MA1**

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