

GCSE Maths (Calculator) Practice Foundation Paper 2

Edexcel Specification

Types of marks:

- M method marks
 A accuracy marks
 B unconditional accuracy marks
 (independent of M marks)

Abbreviations:


- cao cannot accept other
 ft follow through
 oe or equivalent

No working:

If no working is shown, then correct answers score full marks and incorrect answers score no marks.

Other:

If the correct answer has **clearly** been obtained from incorrect working, award zero marks.

1.		5 marks total
a.	M1 Attempt to subtract 3 from all sides. M1 One of $-4 < x$ or $x \leq 2$ A1 for $-4 < x \leq 2$ oe	3 marks
b.	A2 Fully correct diagram ft. [A1 Correct range with one inequality circle correct ft.] 	2 marks
2.		4 marks total
	M1 Converting £1.70 into \$2.414 or converting \$3.30 into £2.3239... M1 Converting 2.5 litres into 0.65 US gallons or converting 1 US gallon into 3.846... litres M1 Correct comparison of prices. For example, 1 litre is $£1.70 \div 2.5 = 68p$ in UK and 1 litre is $£2.3239... \div 3.846... = 60.4p$ in US dA1 Answer of United States with justification	4 marks
3.		2 marks total
a.	A1 14 907.0247[933...] Note: do not accept answers with fewer than 4 decimal places.	1 mark
b.	14 900 cao.	1 mark

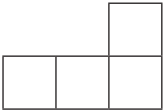
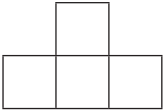


4.		4 marks total																																																															
a.	M1 Attempt to decompose into prime numbers (condone one error). A1 for $2 \times 2 \times 3 \times 3 \times 5$ or $2^2 \times 3^2 \times 5$	2 marks																																																															
b.	Method one: M1 listing prime factors of 70 and correctly completing a Venn diagram A1 1260 Method two: M1 listing at least 10 multiples of 180 and 70 A1 1260	2 marks																																																															
5.		2 marks total																																																															
	M1 3×4 or listing all combinations SB, SC, SF, SV, PB, PC, PF, PV, GB, GC, GF, GV A1 12 cao.	2 marks																																																															
6.		2 marks total																																																															
	A1 9762	1 mark																																																															
	A1 2796	1 mark																																																															
7.		4 marks total																																																															
a.	A2 Fully correct sample space diagram (condone alternative order). [A1 Sample space diagram with no more than one error (condone one missing row or column).] <table border="1" data-bbox="167 1361 596 1771"> <tbody> <tr><td></td><td>1</td><td>2</td><td>2</td><td>3</td><td>3</td><td>4</td></tr> <tr><td>1</td><td>1</td><td>2</td><td>2</td><td>3</td><td>3</td><td>4</td></tr> <tr><td>1</td><td>1</td><td>2</td><td>2</td><td>3</td><td>3</td><td>4</td></tr> <tr><td>2</td><td>2</td><td>4</td><td>4</td><td>6</td><td>6</td><td>8</td></tr> <tr><td>2</td><td>2</td><td>4</td><td>4</td><td>6</td><td>6</td><td>8</td></tr> <tr><td>2</td><td>2</td><td>4</td><td>4</td><td>6</td><td>6</td><td>8</td></tr> <tr><td>5</td><td>5</td><td>10</td><td>10</td><td>15</td><td>15</td><td>20</td></tr> <tr><td>5</td><td>5</td><td>10</td><td>10</td><td>15</td><td>15</td><td>20</td></tr> <tr><td>5</td><td>5</td><td>10</td><td>10</td><td>15</td><td>15</td><td>20</td></tr> </tbody> </table>		1	2	2	3	3	4	1	1	2	2	3	3	4	1	1	2	2	3	3	4	2	2	4	4	6	6	8	2	2	4	4	6	6	8	2	2	4	4	6	6	8	5	5	10	10	15	15	20	5	5	10	10	15	15	20	5	5	10	10	15	15	20	2 marks
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b.	M1 Denominator of 48 ft. A1 $\frac{15}{48}$ oe.	2 marks																																																															

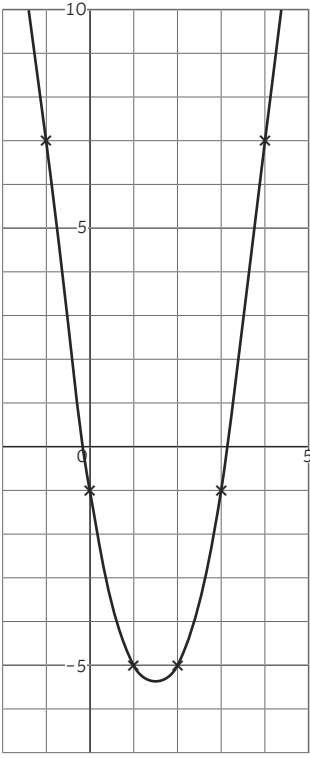


8.		4 marks total
a.	A1 (-3, 4)	1 mark
b.	A1 Coordinate plotted at (0, -5).	1 mark
c.	M1 (2, "y") or ("x", 3) A1 (2, 3)	2 marks
9.		5 marks total
a.	A1 -10	1 mark
b.	M1 Subtracting 2 before dividing by 3. A1 7	2 marks
c.	M1 Correct substitution of at least one value of x . A1 Correct substitution of two relevant values of x to show that Ben is incorrect, e.g. when $x = 3$, $y = 11$ and $x = 6$, $y = 20$	2 marks
10.		3 marks total
	<p>Method one: M1 14m or 5m seen. M1 $\frac{14}{0.4} [= 35]$ and $\frac{5}{0.75} [= 6.\dot{6}]$ dA1 $35 \times 6.\dot{6} = 233.\dot{3}$ and conclusion: No.</p> <p>Method two: M1 14m or 5m seen M1 $14 \times 5 [= 70\text{m}^2]$ and $200 \times 0.4 \times 0.75 [= 60\text{m}^2]$ dA1 Conclusion: No</p>	3 marks
11.		3 marks total
	<p>M1 $360 \div 20 [= 18]$ and attempt to multiply their "18" by at least one frequency. M1 Angles calculated as 54°, 90°, 72°, 126° and 18°. A1 Fully correct pie chart with labelled sectors. [Award A2 for fully correct, labelled pie chart but with no working out.]</p>	3 marks



12.		3 marks total
	<p>M1 3×5 and 7×2</p> <p>or 10×2 and 3×3</p> <p>or 5×10 and 7×3</p> <p>A1 29</p> <p>A1 cm^2</p>	3 marks
13.		2 marks total
	<p>A1 Correct plan view.</p>  <p>A1 Correct side elevation.</p> 	2 marks
14.		3 marks total
	<p>M1 $3x + 3p = y$</p> <p>M1 $3x = y - 3p$</p> <p>A1 $x = \frac{y - 3p}{3}$ oe.</p> <p>Do not accept $y - 3p \div 3$</p>	3 marks
15.		6 marks total
a.	<p>A2 7, -5, -1, 7</p> <p>[A1 3 correct values.]</p>	2 marks



b.	 <p>A1 All coordinates plotted correctly.</p> <p>dA1 Coordinates joined with smooth curve.</p> <p>Note: this A1 can only be awarded if at least 4 points are plotted correctly.</p>	2 marks
c.	<p>A1 $x = 0.5$ to 0.9 inclusive.</p> <p>A1 $x = 2.2$ to 2.6 inclusive.</p>	2 marks
16.		3 marks total
	<p>M1 Correct bearing of R from P ($\pm 3^\circ$).</p> <p>M1 Correct bearing of R from Q ($\pm 3^\circ$).</p> <p>A1 for correct location of boat clearly marked.</p>	3 marks
17.		3 marks total
	<p>M1 Midpoints calculated as 21, 27, 35, 47.5, 63.5 and attempt to multiply their midpoints by the frequencies $4 \times 21 + 5 \times 27 + 8 \times 35 + 9 \times 47.5 + 4 \times 63.5$ [= 1180.5]</p> <p>M1 $\frac{1180.5}{30}$ ft.</p> <p>A1 39.35 years cao.</p>	3 marks
18.		3 marks total
	<p>M1 1950×1.03^3 [= 2130.82] or fully correct equivalent method to calculate compound interest.</p> <p>M1 $2000 + (2000 \times 0.025 \times 3)$ [= 2150] or fully correct equivalent method to calculate simple interest.</p> <p>dA1 Bank Account B with justification.</p>	3 marks



19.		3 marks total												
	<p>M1 $\frac{800}{50} = 16$</p> <p>A1 $16 \times 16 = 256$ cao.</p> <p>A1 Assumption: the same proportion of people will want cheese sandwiches as in the sample.</p>	3 marks												
20.		4 marks total												
	<p>M1 Fully correct method to work out the height of the pyramid: $\sqrt{8.5^2 - 3^2}$ [= 7.95...]</p> <p>M1 $\frac{1}{3} \times 6^2 \times$ "their 7.95..." [= 95.43...]</p> <p>M1 "their 95.43..." $\times 300$</p> <p>A1 28 630.8 g cao.</p>	4 marks												
21.		3 marks total												
	<table border="1" style="display: inline-table; vertical-align: top;"> <thead> <tr> <th style="text-align: center;">Equation</th> <th style="text-align: center;">Graph</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">$y = 3x - 4$</td> <td style="text-align: center;">B</td> </tr> <tr> <td style="text-align: center;">$y = 2^x$</td> <td style="text-align: center;">C</td> </tr> <tr> <td style="text-align: center;">$y = x^3 - 2x$</td> <td style="text-align: center;">E</td> </tr> <tr> <td style="text-align: center;">$y = x^2 + 3x - 1$</td> <td style="text-align: center;">A</td> </tr> <tr> <td style="text-align: center;">$y = 3 - x$</td> <td style="text-align: center;">D</td> </tr> </tbody> </table> <p style="margin-left: 20px;">A3 All correctly matched. A2 One error or omission. A1 Two errors or omissions</p>	Equation	Graph	$y = 3x - 4$	B	$y = 2^x$	C	$y = x^3 - 2x$	E	$y = x^2 + 3x - 1$	A	$y = 3 - x$	D	3 marks
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22.		4 marks total												
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 10px; margin-right: 10px;"> <p style="text-align: center;">physics maths</p> </div> <div style="margin-left: 10px;"> <p>£ M2 Fully correct Venn diagram. [M1 No more than one error or omission.]</p> <p>M1 Denominator of 50.</p> <p>A1 $\frac{12}{50}$ oe.</p> </div> </div>	4 marks												
23.		2 marks total												
	<p>M1 103% or 1.03 seen or fully correct method for calculating reverse percentages.</p> <p>$250\ 000 \div 1.03$</p> <p>A1 £242 718.45 cao.</p>	2 marks												



24.		3 marks total
	<p>Method one: M2 for correctly listing multiples of ratios and moving three from Rupert to Alisha (M1 for one error)</p> <p>5:7 → 8:4</p> <p>10:14 → 13:11</p> <p>15:21 → 18:18</p> <p>20:28 → 23:25</p> <p>25:35 → 28:32 which simplifies to 7:8</p> <p>A1 Alisha had 25 and Rupert had 35 sweets.</p> <p>Method two: M1 $5x + 3$ or $7x - 3$ seen. M1 $\frac{8}{7}(5x + 3) = 7x - 3$ oe. and attempt to solve to get $x = 5$ A1 Alisha had 25 and Rupert had 35 sweets.</p>	3 marks

