



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/23**

Paper 2 (Extended)

**May/June 2016**

MARK SCHEME

Maximum Mark: 40

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**Published**

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### Abbreviations

|      |                            |
|------|----------------------------|
| awrt | answers which round to     |
| cao  | correct answer only        |
| dep  | dependent                  |
| FT   | follow through after error |
| isw  | ignore subsequent working  |
| oe   | or equivalent              |
| SC   | Special Case               |
| nfww | not from wrong working     |
| soi  | seen or implied            |

| Question | Answer  | Mark | Part Marks   |
|----------|---|------|--|
| 1        | [0]8 33   | 3    | <b>M2</b> for $\frac{40}{50} \times 60$ oe<br>or <b>M1</b> for $\frac{40}{50}$ soi                 |
| 2        | 60  | 2    | <b>M1</b> for $\frac{36}{3}$   |
| 3        | 11.5  | 2    | <b>M1</b> for re-ordering list of at least 6   |
| 4 (a)    | 1800  | 2    | <b>M1</b> for $180 - \frac{360}{12}$ or for $(12 - 2) \times 180$ soi                              |
| (b)      | 24  | 2    | <b>B1</b> for $\frac{360}{180 - 165}$  |
| 5        | 3   | 3    | <b>M2</b> for $\frac{9.7 - 2 \times 2.6}{1.5}$<br>or <b>M1</b> for $9.70 - 2 \times 2.6$           |
| 6 (a)    | 51  | 1    |  |
| (b)      | -96   | 1    |  |
| (c)      | 0.5 oe  | 1    |  |
| 7 (a)    | $7.54 \times 10^{-4}$                                 | 2    | <b>M1</b> for $0.00075 + 0.000004$ or $750 \times 10^{-6}$ or $0.04 \times 10^{-4}$<br>or figs 754 |
| (b)      | $3 \times 10^{-9}$                                    | 2    | <b>B1</b> for $30 \times 10^{-10}$ or answer 0.000000003   |
| 8        | $x^5 - 7x^2$ final answer                             | 2    | <b>B1</b> for each   |
| 9        | 0.069 0.6 <sup>2</sup> 65% $\frac{2}{3}$ $\sqrt{0.7}$ | 2    | <b>B1</b> for one in wrong place   |
| 10       | 1   | 2    | <b>B1</b> for $6x - 8$ or $-6x + 9$<br><br>If 0 scored <b>SC1</b> for $kx + 1$                     |

|               |  |                 |              |
|---------------|--|-----------------|--------------|
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| <b>Question</b> | <b>Answer</b>  | <b>Mark</b>                                      | <b>Part Marks</b>   |
|-----------------|--|--|---|
| <b>11 (a)</b>   | 3  | <b>2</b>   | <b>B1</b> for $4\sqrt{36}$ oe or $7\sqrt{9}$ oe soi   |
| <b>(b)</b>      | $3 + \sqrt{2}$ final answer  | <b>2</b>   | <b>M1</b> for $\times \frac{3 + \sqrt{2}}{3 + \sqrt{2}}$  |
| <b>12</b>       | Correctly equating one set of coefficients<br>Correct method to eliminate one variable<br>$x = -1$<br>$y = -1$ | <b>M1</b><br><b>M1</b><br><b>B1</b><br><b>B1</b> | Equation $x =$ or $y =$ from one equation<br>Correct substitution into other equation<br><br>If 0 scored <b>SC1</b> for correct substitution into one of original equations and evaluation to find other variable |
| <b>13 (a)</b>   | Correct graph  | <b>2</b>   | <b>B1</b> for $y = x^3$ shape<br><b>B1</b> for cubic graph through (0, 2), with 2 marked or (0, 2) on answer line   |
| <b>(b)</b>      | Correct graph  | <b>3</b>   | <b>B1</b> for cos graph, max at (0, $k$ ) approx<br><b>B1</b> for graph through (0, 2), with 2 marked or (0, 2) on answer line<br><b>B1</b> for range as 2 to $-2$ approx   |