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

**CAMBRIDGE INTERNATIONAL MATHEMATICS** **0607/23**

Paper 2 (Extended) **May/June 2017**

MARK SCHEME

Maximum Mark: 40

**Published**

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## MARK SCHEME NOTES

The following notes are intended to aid interpretation of mark schemes in general, but individual mark schemes may include marks awarded for specific reasons outside the scope of these notes.

### Types of mark

M Method marks, awarded for a valid method applied to the problem.

A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.

B Mark for a correct result or statement independent of Method marks.

When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. The notation '**dep**' is used to indicate that a particular M or B mark is dependent on an earlier mark in the scheme.

### Abbreviations

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

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| Question | Answer | Marks | Part Marks |
|---|---|---|---|
| 1 | 1.5 oe | **2** | **M1** for $\frac{9}{4}$ |
| 2 | 28 | **1** | |
| 3 | – 5 and 5 | **1** | |
| 4(a) | – 1 | **1** | |
| 4(b) | $-4n + 19$ oe | **2** | **B1** for $-4n + k$ or $pn + 19$, $p \neq 0$ |
| 5 | $x^5 + 3x^3$ final answer | **2** | **B1** for $x^5 + kx^n$ or $kx^n + 3x^3$, $k \neq 0$ |
| 6 | $5 \times 10^{-16}$ | **2** | **B1** for correct value, not in standard form, seen |
| 7 | $\frac{v-u}{a}$ oe final answer | **2** | **M1** for correct rearrangement for $at$ or $t$<br>**M1** for correct division by $a$ |
| 8(a) | $4y^6$ | **2** | **B1** for $ky^6$ or $4y^k$ |
| 8(b) | $32w^{10}$ | **2** | **B1** for $kw^{10}$ or $32w^k$ |
| 9 | [$p$ =] 75<br>[$q$=]105 | **2** | **B1** for each |
| 10 | 0.5 oe | **2** | **M1** for $x + 1 = 2 - x$ or for correctly eliminating $x$ |
| 11 | Correct sketches | **2** | **B1** for each |
| 12 | 8 | **1** | |
| 13(a) | 13 | **2** | **M1** for $4^2 - \left(\sqrt{3}\right)^2$ or better<br>or for three of the terms of $16 + 4\sqrt{3} - 4\sqrt{3} - 3$ correct |
| 13(b) | $\frac{5\sqrt{7}}{7}$ | **1** | |
| 14(a) | $(p-6)(p+5)$ | **2** | **B1** for $(p + a)(p + b)$ where $ab = -30$<br>or $a + b = -1$<br>or $p(p+5) - 6(p+5)$ or $p(p-6) + 5(p-6)$ |
| 14(b) | $(u-v)(x+y)$ | **2** | **M1** for $x(u-v) + y(u-v)$ or<br>$u(x+y) - v(x+y)$ |

| Question | Answer | Marks | Part Marks |
|---|---|---|---|
| 15 | $\frac{16}{1000}$ oe | **3** | **M1** for $y = \frac{k}{x^3}$ oe<br>**M1** for substituting $x = 2$ and $y = 2$ in *their* equation to find $k$ |
| 16 | [amplitude = ] 6<br>[period = ] 60 | **2** | **B1** for each<br>If 0 scored, **SC1** if answers reversed |
| 17 | 7 | **3** | **B1** for cos60 = 0.5<br>**M1** for $5^2 + 8^2 - 2\times5\times8\times\cos 60$ |
| 18 | log$x$ | **1** | |