



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education (9–1)

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**MATHEMATICS**

**0626/01**

Paper 1 (Core)

**May/June 2017**

MARK SCHEME

Maximum Mark: 60

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**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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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            |

| Question | Answer  | Marks     | Part Marks   |
|----------|---|-----------|--|
| 1        | 462   | 1         |  |
| 2        | 16  | 1         |  |
| 3        | 16.99   | 1         |  |
| 4        | 17, 19  | 1         | both correct and no extras   |
| 5        | 8.1%, $0.3^2$ , $\frac{1}{8}$ , 0.18                                | 2         | <b>B1</b> for any 3 values correct relative to each other or for all four correct in same format   |
| 6        | 0.229 cao   | 2         | <b>B1</b> for 0.22 to 0.23<br>or <b>SC1</b> for <i>their</i> answer seen rounded to 3 dp   |
| 7(a)     | 64  | 1         |  |
| 7(b)     | 175   | 1         |  |
| 8        | fully correct drawing   | 2         | <b>B1</b> for either an angle of $60^\circ$ or a horizontal line of 3 cm   |
| 9(a)     | 142<br>[Angles on a] straight line<br>[add up to 180]               | 2         | <b>B1</b> for either correct angle or correct reason   |
| 9(b)     | Alternate [angles are equal]  | 1         |  |
| 10       | 573 – 384 and 5300 – 3200 seen                                      | <b>M1</b> |  |
|          | $\frac{189}{2100} \times 100 = 9\%$ oe                              | <b>A1</b> |  |
| 11       | 567.37 or 567.38 final answer                                       | 2         | <b>M1</b> for $800 \div 1.41$ soi  |
| 12(a)    | 49h final answer  | 2         | <b>M1</b> for $37h + 1.5 \times 8h$ oe soi   |
| 12(b)    | $30(h + 3) + 2(2h + 6)$ oe and<br>correct completion to $34h + 102$ | 2         | <b>B1</b> for $30(h + 3)$ or $2(2h + 6)$ oe seen   |
| 13       | [£]0.46 oe  | 3         | <b>M1</b> for $0.75 \times 1.12$ or 84p oe seen<br><br><b>M1</b> for $1.76 - \text{their } 0.84$ oe<br><br><b>M1</b> for $\text{their } 0.92 \div 2$ oe<br><br>Award a maximum of 2 if not fully correct |
| 14       | 15.75   | 3         | <b>M2</b> for $8x = 126$ oe<br><br>or <b>M1</b> for $3x + x - 2 + 3x + x - 2 = 122$ oe<br><br>or <b>M1</b> for $\text{their } ax = 122 + \text{their } b$  |

| Question  | Answer                          | Marks     | Part Marks   |
|-----------|---------------------------------|-----------|--|
| 15(a)     | 1066.4[0]                       | 3         | <b>B2</b> for 206.4<br>or <b>M2</b> for $860 + \frac{860 \times 8 \times 3}{100}$ oe<br>or <b>M1</b> for $\frac{860 \times 8[\times 3]}{100}$  |
| 15(b)     | 1910.12                         | 2         | <b>M1</b> for $1700 \times 1.06 \times 1.06$ oe  |
| 16(a)     | correct line                    | 1         | must be a single, straight, ruled line   |
| 16(b)     | 150 to 154                      | 1         | <b>FT</b> <i>their</i> reasonable line of best fit with positive gradient  |
| 16(c)(i)  | Valid statement                 | 1         | e.g. Doubled the height of a 12 year old or extended the line of best fit oe   |
| 16(c)(ii) | Valid explanation               | 1         | e.g. Girls and women do not grow at the same rate oe   |
| 17(a)     | 0.15 oe                         | 2         | <b>M1</b> for $0.35 + 0.4 + k + 0.1 = 1$ or better<br>or <b>B1</b> for 0.85 seen   |
| 17(b)     | 48                              | 1         |  |
| 18(a)     | $m^3$                           | 1         |  |
| 18(b)     | $y^{-8}$                        | 1         |  |
| 18(c)     | $\frac{x^5 y^4}{7}$             | 2         | <b>M1</b> for 2 correct parts and both $x$ and $y$ present<br>i.e. $\frac{x^k y^4}{7}$ or $\frac{x^5 y^k}{7}$ or $kx^5 y^4$ ( $k \neq 0$ )   |
| 19(a)     | 13.15, 13.25                    | 2         | <b>B1</b> for each<br>or<br><b>SC1</b> for both answers correct but reversed.  |
| 19(b)     | $2\pi \times 2.1$               | <b>M1</b> |  |
|           | 13.19...                        | <b>A1</b> |  |
|           | <i>their</i> $13.19 > 13.15$ oe | <b>B1</b> | For showing <i>their</i> circumference $> 13.15$   |
| 20        | 1936 and 81 or $44^2$ and $9^2$ | 2         | <b>M1</b> for 2 correct trials evaluated of form:<br>$a^2 + b^2$ where $a < 10$ and $b > 10$ and $a$ and $b$ are integers<br>or<br>for $2017 - a^2 = b^2$ , where $a$ is a positive integer, with $b^2$ being tested to see if it is square<br><br>If 0 scored, <b>SC1</b> for 44 and 9 seen as a pair |

| Question | Answer                       | Marks    | Part Marks   |
|----------|------------------------------|----------|--|
| 21       | $x^2 - 2x - 35$ final answer | <b>2</b> | <b>M1</b> for 3 out of 4 terms correct in $x^2 - 7x + 5x - 35$ or for $x^2 - 2x + k$   |
| 22(a)    | 95.4 or 95.39 to 95.40       | <b>3</b> | <b>M2</b> for $[LN =] \frac{85}{\cos 27}$ oe<br>or <b>M1</b> for $\cos 27 = \frac{85}{LN}$ oe  |
| 22(b)    | 38.6 or 38.58 to 38.59       | <b>3</b> | <b>M2</b> for $85 \times \sin 27$ oe<br>or <b>M1</b> for $\sin 27 = \frac{x}{85}$ oe<br>or <b>M1</b> for correct line indicated on a diagram |