



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

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**MATHEMATICS**

**0580/12**

Paper 1 (Core)

**October/November 2017**

MARK SCHEME

Maximum Mark: 56

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**Published**

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This document consists of 4 printed pages.



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Cambridge IGCSE – Mark Scheme  
PUBLISHEDOctober/November  
2017

## Abbreviations

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

| Question | Answer                                      | Marks | Partial marks                                                                                                                          |
|----------|---------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------|
| 1        | 14 027                                      | 1     |                                                                                                                                        |
| 2        | −3                                          | 1     |                                                                                                                                        |
| 3        | 1                                           | 1     |                                                                                                                                        |
| 4        | [0].00517                                   | 1     |                                                                                                                                        |
| 5        | $\frac{31}{50}$ , $\frac{5}{8}$ , 0.63, 64% | 2     | <b>B1</b> for 3 in correct order<br>or <b>M1</b> for 0.62 or 62% <b>and</b> 0.625 or 62.5%<br>or 4 fractions with a common denominator |
| 6        | 10.1[0]                                     | 2     | <b>M1</b> for [4.5 +] ( $7 \times [0].8$ )<br>or $450 + 7 \times 80$                                                                   |
| 7        | 2.1                                         | 2     | <b>B1</b> for 2.08 or 2.079... or 2.10                                                                                                 |
| 8(a)     | 2, 3, 4, 6                                  | 1     |                                                                                                                                        |
| 8(b)     | 27, 36 cao                                  | 1     |                                                                                                                                        |
| 9        | [x =] 60<br>[y =] 40                        | 2     | <b>B1</b> for each<br>or for two numbers that add to 100                                                                               |
| 10       | 2.5                                         | 2     | <b>M1</b> for 2200 or 0.055 seen<br>or <b>SC1</b> for answer figs 25                                                                   |
| 11       | 32                                          | 2     | <b>M1</b> for $\frac{1}{2} \times 33 \times h = 528$ oe                                                                                |
| 12(a)    | Positive                                    | 1     |                                                                                                                                        |
| 12(b)    | No correlation oe                           | 1     |                                                                                                                                        |
| 13       | [0].35                                      | 2     | <b>M1</b> for $1 - (0.15 + 0.3 + 0.2)$                                                                                                 |
| 14       | 361.5                                       | 1     |                                                                                                                                        |
|          | 362.5                                       | 1     | If zero scored, <b>SC1</b> for both correct but reversed                                                                               |

| Question  | Answer                                  | Marks     | Partial marks                                                                                                                                         |
|-----------|-----------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 15        | 52.2 or 52.19 to 52.20                  | 2         | <b>M1</b> for $\sin [\dots] \frac{6.4}{8.1}$ oe                                                                                                       |
| 16(a)     | (2, 5)                                  | 1         |                                                                                                                                                       |
| 16(b)     | Point plotted at (7, -2)                | 1         |                                                                                                                                                       |
| 16(c)     | Isosceles cao                           | 1         |                                                                                                                                                       |
| 17(a)     | 9                                       | 1         |                                                                                                                                                       |
| 17(b)     | Midpoint marked                         | 1         |                                                                                                                                                       |
| 17(c)     | Perpendicular line drawn                | 1         |                                                                                                                                                       |
| 18        | 120 nfw                                 | 3         | <b>M2</b> for $180 - \frac{360}{6}$ oe $\frac{180 \times (6-2)}{6}$<br>or <b>M1</b> for $\frac{360}{6}$ soi by 60<br>or $180 \times (6-2)$ soi by 720 |
| 19        | Correct ruled net                       | 3         | <b>B2</b> for 4 more correct faces in correct position<br>or <b>B1</b> for 2 or 3 more correct faces in correct position                              |
| 20(a)     | $3\frac{2}{3}$ cao                      | 1         |                                                                                                                                                       |
| 20(b)     | $\frac{3}{12}$ [and $\frac{5}{12}$ ] oe | <b>M1</b> | For correct method to find common denominator<br>e.g. $\frac{12}{48}$ and $\frac{20}{48}$                                                             |
|           | $\frac{2}{3}$ cao                       | <b>A1</b> |                                                                                                                                                       |
| 21        | $[y =] 0.5x + 2$ oe                     | 3         | <b>M2</b> for $[y =] 0.5x + c$ oe $c \neq 2$<br>or <b>M1</b> for $\frac{\text{rise}}{\text{run}}$<br>and <b>B1</b> for $kx + 2, k \neq 0$             |
| 22(a)(i)  | 36                                      | 1         |                                                                                                                                                       |
| 22(a)(ii) | Add 7 oe                                | 1         |                                                                                                                                                       |
| 22(b)     | $4n - 2$ oe                             | 2         | <b>M1</b> for $4n + k, k \neq -2$ oe                                                                                                                  |
| 23(a)     | $\frac{5}{14}$ or 0.357 or 0.357...     | 2         | <b>M1</b> for $7 - 2 = 11n + 3n$ oe or better                                                                                                         |
| 23(b)     | 18                                      | 2         | <b>M1</b> for $p - 3 = 3 \times 5$ or $\frac{p}{5} = 3 + \frac{3}{5}$                                                                                 |

| Question | Answer | Marks | Partial marks                                                                                    |
|----------|--------|-------|--------------------------------------------------------------------------------------------------|
| 24(a)    | 6      | 2     | <b>M1</b> for $\frac{15}{12.5}$ or $\frac{12.5}{15}$ or $\frac{12.5}{5}$ or $\frac{5}{12.5}$ soi |
| 24(b)    | 10     | 2     | <b>M1</b> for $\frac{12.5}{15} \times 12$ or $12 \div \frac{15}{12}$ soi                         |