

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/22

Paper 2 (Extended), maximum raw mark 40

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| Page 2 | Mark Scheme | Syllabus | Paper |
|--------|-----------------------------------------|----------|-------|
| | Cambridge IGCSE – October/November 2015 | 0607 | 22 |

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 | Mark | Part Marks |
|--------------|------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1 (a) | 20 | 1 | |
| (b) | 1.6×10^{-6} | 2 | B1 for correct answer not in standard form |
| 2 (a) | 1.25 oe | 3 | M1 Correct expansion; condone 1 slip M1 Correct simplification of <i>their</i> equation into the form $kx = a$ |
| (b) | -2 3.5 | 1 1 | |
| 3 | 50 | 3 | B2 for $x = 2y^2$ oe or M1 for $x = ky^2$ B1 for $k = 2$ |
| 4 (a) | $\frac{1}{36}$ | 2 | M1 for $\frac{1}{6} \times \frac{1}{6}$ or $\frac{k}{36}$ |
| (b) | 0 oe | 1 | |
| (c) | $\frac{6}{36}$ oe | 2 | M1 for establishing all 6 possible combinations SC1 for $\frac{3}{36}$ |
| 5 (a) | $\begin{pmatrix} -1 \\ -3 \end{pmatrix}$ | 2 | B1 for each component |
| (b) | 13 | 2 | M1 for $\sqrt{5^2 + (-12)^2}$ or better |
| 6 (a) | $(4x + y)(2a - b)$ | 2 | B1 for factor of $4x + y$, or factor of $2a - b$ or factor of $b - 2a$ seen |
| (b) | $(3x + 4)(x - 3)$ | 2 | M1 for $(3x + a)(x + b)$, where $ab = -12$, or $a + 3b = -5$ |
| 7 (a) | 1 | 1 | |
| (b) | $\frac{1}{25}$ | 1 | |

| | | | |
|---------------|------------------------------------------------|-----------------|--------------|
| Page 3 | Mark Scheme | Syllabus | Paper |
| | Cambridge IGCSE – October/November 2015 | 0607 | 22 |

| Question | Answer | Mark | Part Marks |
|-----------------|-----------------------------------------|-------------|----------------------------------------------------------------------------------------------------|
| 8 | | | |
| (a) | 72 | 1 | |
| (b) | 144 | 1FT | $2 \times \text{their (a)}$ |
| (c) | 18 | 1FT | $\frac{180 - \text{their } 144}{2}$ |
| (d) | 18 | 1FT | their (c) |
| 9 | | | |
| (a) | 4 | 3 | M2 for $\sqrt{8^2 - \sqrt{48}^2}$ or M1 for $8^2 = \sqrt{48}^2 + BC^2$ or better |
| (b) | 30 | 2 | B1 for $\sin = \frac{4}{8}$ or $\cos = \frac{\sqrt{48}}{8}$ or $\tan = \frac{4}{\sqrt{48}}$ |
| 10 | | | |
| | [h=] 2 | 1 | |
| | [k=] – 3 | 1 | |
| 11 | | | |
| | Bars with correct column widths | 1 | |
| | Bars with heights 0.8, 3.2, 4, 1.2, 0.7 | 2 | B1 for 3 or 4 correct |