



Standard Form

Mark Scheme 1

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| Level | IGCSE |
| Subject | Maths (0580) |
| Exam Board | Cambridge International Examinations (CIE) |
| Paper Type | Extended |
| Topic | Number |
| Sub-Topic | Standard Form |
| Booklet | Mark Scheme 1 |

Time Allowed: 60 minutes

Score: /50

Percentage: /100

Grade Boundaries:

| A* | A | B | C | D | E | U |
|------|-----|-----|-----|-----|-----|------|
| >85% | 75% | 60% | 45% | 35% | 25% | <25% |

| | | | |
|---|-----------|---|--|
| 1 | [0].00127 | 1 | |
|---|-----------|---|--|

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|---|-----------------------|---|--|
| 2 | 5.74×10^{-5} | 1 | |
|---|-----------------------|---|--|

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|---|-------------------|---|--|
| 3 | 2.7×10^5 | 1 | |
|---|-------------------|---|--|

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| 4 | 5.34×10^7 | 1 | |
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| 5 | [0].00017 | 1 | |
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|---|-----|-----------------|---|--|
| 6 | (a) | 280 | 1 | |
| | (b) | 5×10^6 | 2 | |

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|---|-------------------|---|---|
| 7 | 2.4×10^8 | 2 | B1 for 240 000 000 oe or B1 for $k \times 10^8$ or 2.4×10^k |
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|---|-----|-----------------------|---|--|
| 8 | (a) | 2×10^{10} | 2 | B1 for 20×10^9 or 20 000 000 000 |
| | (b) | 1.25×10^{-1} | 2 | B1 for 0.125 oe |

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|----------|---------------------------------|----------|---|
| 9 | (a) 7.5×10^{-2} | 2 | M1 for 0.075 or $\frac{3}{40}$ or $\frac{6}{80}$ or 0.75×10^{-1} oe |
| | (b) 9.3×10^7 | 2 | M for 93 000 000 or 93×10^6 or 0.93×10^8 oe |

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| 10 | 4.55×10^8 | 2 | B for figs 455 seen |
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| 11 | (a) 1.1×10^5 | 2 | B1 for 110 000 oe e.g. 11×10^4 |
| | (b) 5×10^3 | 2 | B1 for 5000 oe e.g. 0.5×10^4 |

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|-----------|--------------------------------|------------|--|
| 12 | (a) 9486000 | 1 | |
| | (b) 9.486×10^6 | 1ft | |

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| 13 | 5.92×10^8 | 2 | M1 figs 592 on answer line or M1 296×10^6 oe in working |
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| 14 | (a) 86400 | 1 | |
| | (b) 8.64×10^4 | 1ft | |

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| 15 | 1.85×10^4 | 3 | B2 18500 oe seen or M1 $4x = 74000$ or $x = 2 \times 10^4 - 1.5 \times 10^3$ |
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| 16 | (a) 1.646×10^7 | 1 | |
| | (b) 3.32×10^{-2} | 2 | B1 for 0.0332 seen or 3.3×10^{-2} as answer or B1 for 3.32×10^k |

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| 17 | $1.15(2) \times 10^{-2}$ | 2 | M1 figs 115(2) |
| 18 | $3.2(0) \times 10^4$ | 2 | B1 32000 or 32×10^3 etc |
| 19 | 6.4×10^7 | 2 | M1 $64 \times 100^2 \times 10^2$ or 64 000 000 oe |
| 20 | $\frac{53}{11} > 4.80 > \sqrt{23} > 48\%$ | 2 | M1 for decimals seen 4.7958... 0.48 (4.80) 4.81(...) |
| 21 | $5(.00) \times 10^5$ | 2 | SC1 for 5×10^k or 500 000 on answer line |
| 22 (a) | 3×10^{11} | 2 | M1 $60 \times 5 \times 10^9$ or better |
| (b) | 5 000 000 or 5×10^6 or 5 million | 2 | M1 $0.8 \times 10^7 - 3 \times 10^6$ oe or M1 $5x = 4 \times 10^7 - 15 \times 10^6$ oe If m is used for a million it must be used consistently |