UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS Cambridge Checkpoint

## MATHEMATICS

1112/02
Paper 2
For Examination from 2012
SPECIMEN MARK SCHEME
1 hour

## MAXIMUM MARK: 50

| Question | 1 |  |  |  |
| :--- | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
| (a) | 1 | 30 |  |  |
| (b) | 2 | 32 | 1 mark for their total $\div 9$ seen |  |
| Total | 3 |  |  |  |


| Question | 2 |  |  |  |
| :---: | :---: | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |  |
| (a) | (i) | 1 | 9 (litres) |  |
|  | (ii) | 1 | 0.5 (litres) |  |
| (b) | 2 | $3: 1: 2$ | 1 mark for $1500: 500: 1000$ or better <br> seen: <br> Do not accept: $1.5: 0.5: 1$ |  |
| (c) | 2 | 720 | 1 mark for $450 \div 5$ or 90 seen |  |
| Total | 6 |  |  |  |


| Question | 3 |  |  |  |
| :---: | :---: | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |  |
| (a) | (i) | 1 | 80 |  |
|  | (ii) | 2 | 5 | 1 mark for $100=35+15 h$ or 75 seen |
| (b) | 2 | $\frac{k+2}{3}$ [or equivalent] | 1 mark for $k+2=3 m$ seen <br> or $\frac{k-2}{3}$ or $k+\frac{2}{3}$ as answer |  |
| Total | 5 |  |  |  |


| Question | $\mathbf{4}$ |  |  |  |
| :--- | ---: | :---: | :--- | :--- |
| Part |  | Mark | Answer | Further Information |
| (a) | (i) | 1 | 1518 |  |
|  | (ii) | 1 | 3.18 pm [or follow through <br> answer from (a) (i)] | Award mark for their time from (i) written <br> in 12-hour clock. Must include pm |
| (b) | 1 | 19 (minutes) |  |  |
| (c) | 2 | $40(\mathrm{~km} / \mathrm{h})$ | 1 mark for $10 \div 0.25$ [or equivalent] |  |
| Total | 5 |  |  |  |


| Question | $\mathbf{5}$ |  |  |  |
| :--- | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Further Information |  |
| (a) | 1 | $(3,2)$ marked |  |  |
| (b) | 1 | $(-3,3)$ |  |  |
| (c) | 1 | C drawn correctly | Or 270 <br> include both angle and direction. |  |
| (d) | 2 | $90^{\circ}$ clockwise <br> centre $(0,0)$ |  |  |
| Total | 5 |  |  |  |
|  |  |  |  |  |


| Question | $\mathbf{6}$ |  |  |
| :--- | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |
| (a) | 1 | 14,17 | both correct |
| (b) | 1 | 32 | 1 mark for expression with 3p |
| (c) | 2 | $3 p+2$ [or equivalent] | Reason to show why 60 is not in <br> the sequence e.g. <br> Pattern 19 is 59 and pattern 20 is <br> 62. <br> None of the numbers are in the 3 <br> times table and 60 is. <br> 60 counters is pattern 19 1/3 |
| (d) | Pattern 60 uses 182 counters. <br> It takes too long to draw. |  |  |
| Total | 5 |  |  |


| Question | 7 |  |  |
| :--- | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |
| (a) | 1 | 15.6 | $\begin{array}{l}\text { any order, all correct } \\ \text { (b) }\end{array}$ |
| $24\left(\mathrm{~cm}^{3}\right)-1$ mark |  |  |  |$]$| $39 .(26990 \ldots)$ |
| :--- |
| (c) |
| foruncating of $39.26990 \ldots$ |
| 1 mark for $\frac{1}{2} \times \pi \times 5^{2}$ |


| Question | $\mathbf{8}$ |  |  |
| :--- | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |
| (a) | 1 | $\$ 1380$ |  |
| (b) | 2 | $20(\%)$ | 1 mark for $\frac{48}{240} \times 100$ <br> $150 \times \frac{104}{100}$ or $150+150 \times \frac{4}{100}$ [or equivalent] <br> or $\$ 6$ seen |
| (c) | 2 | (\$) 156 |  |
| Total | 5 |  |  |


| Question | $\mathbf{9}$ |  | Further Information |
| :--- | :---: | :--- | :--- |
| Part | Mark | Answer | Tolerance $\pm 2 \mathrm{~mm}$ <br> (Make and use overlay.) |
|  | 3 | Arc radius 7 cm centre $A-1$ <br> mark <br> Line 2 cm from $A B-1$ mark <br> Intersection labelled $T-1$ mark |  |
| Total | 3 |  |  |


| Question | 10 |  |  |  |
| :--- | :---: | :---: | :--- | :--- |
| Part | Mark | Answer | Further Information |  |
| (a) | 1 | All cells completed correctly. |  |  |
| (b) | (i) | 1 | $\frac{1}{25}$ or 0.04 or $4 \%$ | Award marks in (b) and (c) if answers <br> follow through correctly from answers <br> given in table. |
|  | (ii) | 1 | 0 | [Follow through answers given in table.] |
| (c) | 2 | $\frac{2}{5}$ | [Follow through answers given in table.] <br> 1 mark for $\frac{10}{25}$ or 0.4 or $40 \%$ |  |
| Total | 5 |  |  |  |


| Question | 11 |  | Further Information |  |
| :--- | :---: | :--- | :--- | :---: |
| Part | Mark | Answer | Correctly stating Pythagoras' <br> Theorem -1 mark <br> $40^{2}+25^{2}=1600+625=2225-1$ <br> mark <br> $47 .(16990 \ldots)-1$ mark |  |
| Total | 3 | Allow any rounding or truncation of the <br> correct answer 47.16990... |  |  |

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