edexcel
advancing learning, changing lives

# Mark Scheme (Results)

## November 2010

GCSE

## GCSE Mathematics (1380)
## Paper 1F

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Mark Scheme that require the help of a subject specialist, you may find our Ask The Expert email service helpful.

Ask The Expert can be accessed online at the following link:

http://www.edexcel.com/Aboutus/contact-us/

November 2010

Publications Code UG025819

## NOTES ON MARKING PRINCIPLES

### 1 Types of mark

M marks: method marks A marks: accuracy marks
B marks: unconditional accuracy marks (independent of M marks)

### 2 Abbreviations

cao – correct answer only
ft – follow through
isw – ignore subsequent working
SC: special case
dep – dependent
oe – or equivalent (and appropriate)
indep - independent

### 3 No working

If no working is shown then correct answers normally score full marks
If no working is shown then incorrect (even though nearly correct) answers score no marks.

### 4 With working

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.
If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.
If it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks. Send the response to review, and discuss each of these situations with your Team Leader.
If there is no answer on the answer line then check the working for an obvious answer.
Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.
If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

**5 Follow through marks**

Follow through marks which involve a single stage calculation can be awarded without working since you can check the answer yourself, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

**6 Ignoring subsequent work**

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: e.g. incorrect canceling of a fraction that would otherwise be correct

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect e.g. algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

**7 Probability**

Probability answers must be given a fractions, percentages or decimals. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).

Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.

If a probability answer is given on the answer line using both incorrect and correct notation, award the marks.

If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

**8 Linear equations**

Full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously indicated in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded.

**9 Parts of questions**

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

**10 Range of answers**

Unless otherwise stated, when an answer is given as a range (e.g 3.5 – 4.2) then this is inclusive of the end points (e.g 3.5, 4.2) and includes all numbers within the range (e.g 4, 4.1)

| 1380/1F | | | | | |
|---|---|---|---|---|---|
| Question | | Working | Answer | Mark | Notes |
| 1 | (a) | | 2358 | 1 | B1 cao |
| | (b) | | 8532 | 1 | B1 cao |
| | (c) | | number ending in 3 or 5 | 1 | B1 for number ending in 3 or 5 |
| 2 | (a) | | Completed bar chart | 1 | B1 for bar with height 5 |
| | (b) | 6 + 8 + 5 | 19 | 2 | M1 for adding 3 heights<br>(at least 2 correct, can f.t.)<br>A1 ft from (a) |
| 3 | (a) | | four thousand nine hundred and six | 1 | B1 cao |
| | (b) | | 10 548 | 1 | B1 cao |
| | (c) | | 460 | 1 | B1 (accept words) |
| | (d) | | 30 000 | 1 | B1 (accept words) |
| 4 | (a) | | 1 | 1 | B1 cao |
| | (b) | | Angus | 1 | B1 cao |

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 5 (a) | | $\frac{1}{5}$ | 1 | B1 for $\frac{1}{5}$ oe (accept one fifth but not fifth) |
| (b) | | 75 | 1 | B1 cao |
| (c) | | Any 6 squares shaded | 1 | B1 cao |
| (d) | | $\frac{6}{10}$ and $\frac{66}{100}$ | 2 | M1 for attempt at equivalent fractions or cancelling or 1 correct<br>A1 both fractions correct |
| 6 (i) | | 6 | 3 | B1 cao |
| (ii) | | 12 | | B1 cao |
| (iii) | | 8 | | B1 cao |
| 7 (a) | | 2 lines marked | 2 | B2 for correct 2 lines, no extras<br>(B1 for 1 correct line, no extras<br>OR 2 correct lines with both 'diagonals'<br>OR 2 correct lines with 1 extra line) |
| (b) | | 3 | 1 | B1 cao |

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 8 (a) | | (0)8 14 | 1 | B1 for (0)8 14 |
| (b)(i) | | 11 | 2 | B1 for 11 |
| (ii) | | (0)9 39 | | B1 for (0)9 39 |
| (c) | 08 50 – 07 26 | 84 | 2 | M1 for 08 50 seen or digits 124 seen<br>A1 for 84<br>(Accept 1 hr 24 min but not 1.24, 1:24 etc) |
| 9 (a) | | 14 | 1 | B1 cao |
| (b) | | 17 | 1 | B1 cao |
| (c) | | 10 | 1 | B1 cao |
| (d) | | 64 | 1 | B1 cao |
| 10 (a)(i) | | 12 | 3 | B1 cao |
| (ii) | | 7 | | B1 cao |
| (iii) | | 5 | | B1 cao |
| (b) | eg $3^2 + 4^2 = 25$<br>eg $36 + 49 = 85$ | e.g. $9 + 16 = 25$<br>which is odd | 2 | M1 for square number + square number (eg 16 + 9)<br>NOTE: 16 + 10 scores M0 A0<br>or $x^2 + y^2$ with at least one evaluated correctly (eg $4^2 + 3^2 = 16 + 6$)<br>or $x^2 + y^2$, neither evaluated but correct total (eg $4^2 + 3^2 = 25$)<br>A1 square number + different square number with correct total that is odd |

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 11 (a) (i) | | 9 | 2 | B1 cao |
| (ii) | | 12 | | B1 cao |
| (b) | 3 × 2 + 4 × − 1<br>= 6 − 4 | 2 | 2 | M1 for 3 × 2 + 4 × −1 oe<br>A1 cao |
| 12 (i) | | grams or g | 3 | B1 |
| (ii) | | metres or m | | B1 |
| (iii) | | millilitres or ml | | B1 (accept $cm^3$, cc, c*l*) |
| 13 (a) | | 80 | 1 | B1 (accept answer in range 78 – 82 inc) |
| (b) | | 7.50 | 1 | B1 (accept answer in range 7.30 – 7.70 inc) |
| 14 (a) | | 2*n* | 1 | B1 for 2*n* oe |
| (b) | | *n* + 3 | 1 | B1 for *n* + 3 oe |
| 15 (a) | | Food | 1 | B1 cao |
| (b) | | ¼ | 1 | B1 for ¼ oe |
| (c) | 25 × 4 | 100 | 2 | M1 for 25 × 4 or ft from (b)<br>A1 cao |

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 16 (a) | | Reason | 1 | B1 for (vertically) opposite angles are equal oe |
| (b) | | Reason | 1 | B1 for valid reason eg because it is 30°<br>eg angles on a (straight) line add to 180°<br>eg they add to 380° not 360° |
| 17 (a) | | Green | 1 | B1 cao |
| (b) | | $\frac{2}{6}$ | 1 | B1 for $\frac{2}{6}$ oe |
| 18 (i) | | Cone | 2 | B1 (accept incorrect spelling if intention is clear) |
| (ii) | | Cylinder | | B1 (accept incorrect spelling if intention is clear) |
| 19 | 30 × 50 | 1500 | 2 | M1 for correctly rounding at least one number.<br>A1 cao |
| 20 | 540 − 240 = 300<br>$\frac{15}{100}$ × 300<br>(or 10% = 30 5% = 15<br>30 + 15 = 45) | 45 | 3 | M1 for 540 – 240 or 300 seen<br>M1 (dep) for $\frac{15}{100}$ × '300'<br>or correct method for 10% + 5% of '300'<br>A1 cao<br><br>**SC**: If no marks scored award B1 for an answer of 81 or 36 |

<table>
<tr><th>Question</th><th>Working</th><th>Answer</th><th>Mark</th><th>Notes</th></tr>
<tr>
<td>21</td>
<td>
<table>
<tr><td>x</td><td>–2</td><td>–1</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>y</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td>–1</td></tr>
</table>
</td>
<td>graph</td>
<td>3</td>
<td>(Table of values)<br>M1 for at least 2 correct attempts to find points by substituting values of x<br>M1 ft for plotting at least 2 of their points (any points plotted from their table must be correct)<br>A1 for correct line between x = –2 and x = 5<br><br>or<br><br>(No table of values)<br>M2 for at least 2 correct points (and no incorrect points) plotted<br>or line segment of x + y = 4 drawn (ignore any additional incorrect segments)<br>(M1 for at least 3 correct points plotted with no more than 2 incorrect)<br>A1 for correct line between x = –2 and x = 5<br><br>or<br><br>(Use of y = mx + c)<br>M2 for at least 2 correct points (and no incorrect points) plotted<br>(M1 for y = 4 – x or line drawn with gradient of -1 or line drawn with a y intercept of 4 and a negative gradient)<br>A1 for correct line between x = –2 and x = 5</td>
</tr>
</table>

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 22 (a) | | <table><tr><td>13</td><td>15</td></tr><tr><td>15</td><td>17</td></tr></table> | 1 | B1 cao |
| (b) | | (4, 7), (6, 5), (8, 3) | 2 | B2 for all 3 pairs and no extra (number in any order in each pair, condone use of addition sign) and no extra pairs<br>(B1 for 1 or 2 or 3 correct pairs and no more than 3 extra pairs given (ignoring repeats)) |
| (c) | | $\frac{3}{20}$ | 2 | B2 ft oe<br>Accept answer as fraction or decimal or percentage<br>(B1 for $\frac{x}{20}$, $x < 20$, $x \neq 3$ or $\frac{3}{x}$, $x > 3$, $x \neq 20$)<br>**SC**: If no marks scored award B1 for '3 out of 20' or other use of incorrect notation |
| 23 (a)(i) | | 36 | 2 | B1 cao |
| (ii) | | 16 | | B1 cao |
| (b)(i) | | − 2 | 2 | B1 cao |
| (ii) | | 12 | | B1 for 12 or +12 |
| 24 | $2 \times 2 \times 2 = 8$<br>$8 \div 2 = 4$ | 4<br>$cm^3$ | 3 | M1 for $2 \times 2 \times 2 \div 2$ oe<br>or 1 + 1 + 0.5 + 0.5 + 0.5 + 0.5 oe<br>A1 cao<br>B1 (indep) for $cm^3$ |

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 25 (a) | | <table><tr><td>6</td><td>9</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td>2</td><td>4</td><td>7</td><td>7</td><td>7</td><td>8</td></tr><tr><td>8</td><td>0</td><td>1</td><td>2</td><td>3</td><td>3</td><td>6</td></tr><tr><td>9</td><td>1</td><td>2</td><td></td><td></td><td></td><td></td></tr></table> Key: 7 \| 2 = 72 | 3 | M1 for ordered or unordered stem and leaf diagram (condone 2 errors, 1 number misplaced counts as one error)<br>A1 for correctly ordered and fully correct diagram<br>NB: ignore commas between leaves, stem could be 60, 70, 80, 90<br>B1 for key e.g. 7 \| 2 = 72 |
| (b) | | 77 | 1 | B1 for 77 or ft from (a) |
| 26 | $\frac{17}{20} - \frac{8}{20}$ | $\frac{9}{20}$ | 2 | M1 for a correct common denominator and at least one correct numerator (must be $\frac{8}{20}$ if 20 used as common denominator)<br>A1 for $\frac{9}{20}$ oe |
| 27 | | Correct construction | 2 | M1 for two pairs of correct intersecting arcs (may be on the same side of *AB*)<br>A1 for correct perpendicular bisector<br><br>(**SC**: B1 if no marks scored, for line within guidelines) |
| 28 | $\frac{2+12}{2}, \frac{3+7}{2}$ | 7, 5 | 2 | M1 for $\frac{2+12}{2}$ or $\frac{3+7}{2}$ oe<br>(may be implied by one correct coordinate)<br>A1 cao<br><br>(SC B1 for 5, 7 ) |

| Question | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 29 (a) | $3x + 15 + 10x - 12$ | $13x + 3$ | 2 | M1 for correctly multiplying out one bracket<br>A1 cao |
| (b) | | $5(x + 2)$ | 1 | B1 cao |
| (c) | | $x(x - 7)$ | 1 | B1 cao |
| 30 (a) | | rotation 180°<br>centre (0, 0) | 3 | B1 for rotation<br>B1 for about (0,0)<br>B1 for 180° (accept half turn)<br><br>**NB**: If more than one transformation seen then B0 |
| (b) | | triangle with vertices<br>(6, 1) (6, 4) (5, 4) | 1 | B1cao |
| 31 (a) | | $4n - 2$ | 2 | B2 for 4n – 2 oe (including unsimplified)<br>(B1 for $4n$ **or** $4n + k$ , $k \neq -2$<br>**or** $4n - k$, $k \neq 2$ **or** $n = 4n - 2$ |
| (b) (i) | | 1 | 2 | B1 cao |
| (ii) | | – 15 | | B1 cao |

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481

Email publications@linneydirect.com

Order Code UG025819 November 2010

For more information on Edexcel qualifications, please visit www.edexcel.com/quals

Edexcel Limited. Registered in England and Wales no.4496750
Registered Office: One90 High Holborn, London, WC1V 7BH