

# Mark Scheme (Results)

## November 2010

GCSE

GCSE Mathematics (5384F)  
Paper 11F

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](http://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 UG025841

All the material in this publication is copyright

© Edexcel Ltd 2010

**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If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.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 as 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)

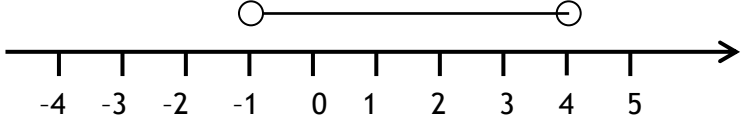
| 5384F/11F |  |                       |             |  |
|-----------|--|-----------------------|-------------|--|
| Question  | Working  | Answer                | Mark        | Notes  |
| 1         | $4 \times 1.50$<br>$9 \div 2$<br>$7.98 + '6.00' + 9$ | 6.00<br>4.50<br>22.98 | 1<br>1<br>1 | B1 cao<br>B1 cao<br>B1 ft from their '6'   |
| 2 (i)     |  | 6                     | 3           | B1 cao   |
| (ii)      |  | 12                    |             | B1 cao   |
| (iii)     |  | 8                     |             | B1 cao   |
| 3 (a)(i)  |  | 9                     | 2           | B1 cao   |
| (ii)      |  | 12                    |             | B1 cao   |
| (b)       |  | 2                     | 2           | M1 for $3 \times 2 + 4 \times -1$ oe<br>A1 cao   |
| 4 (a)     |  | 2 lines marked        | 2           | B2 for correct 2 lines, no extras<br>(B1 for 1 correct line, no extras OR 2 correct lines with both 'diagonals' OR 2 correct lines with 1 extra line |
| (b)       |  | 3                     | 1           | B1 cao   |
| 5 (a)     |  | 80                    | 1           | B1 answer in range 78 - 82   |
| (b)       |  | 7.50                  | 1           | B1 answer in range 7.3(0) - 7.7(0)   |

| 5384F/11F |            |          |      |  |
|-----------|------------|----------|------|--|
| Question  | Working    | Answer   | Mark | Notes  |
| 6 (i)     |            | Cone     | 2    | B1 (accept incorrect spelling if intention is clear)   |
| (ii)      |            | Cylinder |      | B1 (accept incorrect spelling if intention is clear)   |
| 7         | $3 \div 5$ | 0.6      | 2    | M1 for $3 \div 5$ or $5 \overline{)3.0}$ or $\frac{3}{5} \times 2$ or $\frac{3 \times 2}{5 \times 2}$ or $\frac{6}{10}$ seen<br>A1 for 0.6   |
| 8 (a)(i)  |            | 4        | 2    | B1 cao   |
| (ii)      |            | -2       |      | B1 cao   |
| (b)(i)    |            | -2       | 2    | B1 cao   |
| (ii)      |            | 12       |      | B1 cao   |
| 9         |            | 70       | 3    | M1 for $a + a + a - 30$ or $3a - 30$ seen<br>M1 ft for $3a = 210$ or $3a = '180' + 30$ or $a + a + a = 210$ or $a + a + a = '180' + 30$<br>A1 for 70<br>Note if T & I used then award 3 marks for answer of 70 |
| 10 (a)    |            | 5        | 1    | B1 cao   |
| (b)       |            | 3        | 1    | B1 cao   |

| 5384F/11F |   |                               |      |   |
|-----------|---|-------------------------------|------|---|
| Question  | Working   | Answer                        | Mark | Notes   |
| 11 (a)    |   | Midpoint marked               | 3    | B1 for midpoint, tolerance 2mm (overlay)  |
| (b)       |   | Circle with 5 cm radius drawn |      | B2 for fully correct circle of radius 5 cm centre P or follow through 'P', tolerance of radius 2mm<br>(B1 for a circle with centre 'P' or for a circle of radius 5 cm, tolerance of radius 2mm)   |
| 12        | $150 \div 5 = 30$<br>$30 \times 2 = 60$<br>$150 - 60$ | 90                            | 3    | M2 for $150 - 2 \times 150 \div 5$ oe or sight of 60<br>(M1 for $\frac{1}{5} \times 150$ or $150 \div 5$ or sight of 30)<br>A1 for 90 cao<br><br><b>Alternative 1</b><br><br>M2 for $\frac{3}{5} \times 150$ or $3 \times 150 \div 5$ or $0.6 \times 150$<br>(M1 for $\frac{1}{5} \times 150$ or $150 \div 5$ or sight of 30)<br><br>A1 for 90 cao<br><br><b>Alternative 2</b><br>M2 for $1 - \frac{2 \times 30}{5 \times 30}$ or $1 - \frac{60}{150}$ or $\frac{90}{150}$<br><br>(M1 for $\frac{2 \times 30}{5 \times 30}$ or $\frac{60}{150}$ )<br>A1 cao |

| 5384F/11F |  |        |      |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
|-----------|--|--------|------|--|---|------|------|----|----|------|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|----|---|---|---|--------|---|---|
| Question  | Working  | Answer | Mark | Notes  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 13        | $\frac{4}{100} \times 500 = 20$  | 40     | 2    | M1 for $\frac{4}{100} \times 500$ oe or $\frac{8}{100} \times 500$ oe or sight of 20 or 520<br>A1 cao<br>SC B1 for 540 |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 14        | $\begin{array}{r} 451 \\ \underline{23} \times \\ 1353 \\ \underline{9020} \\ 10373 \end{array}$ <table border="1"><tr><td>400</td><td>50</td><td>1</td><td>×</td></tr><tr><td>8000</td><td>1000</td><td>20</td><td>20</td></tr><tr><td>1200</td><td>150</td><td>3</td><td>3</td></tr></table><br><table border="1"><tr><td>4</td><td>5</td><td>1</td><td>×</td></tr><tr><td>8</td><td>0</td><td>2</td><td>2</td></tr><tr><td>1</td><td>1</td><td>3</td><td>3</td></tr><tr><td>2</td><td>5</td><td>3</td><td></td></tr><tr><td>10</td><td>3</td><td>7</td><td>3</td></tr></table><br>$8000 + 1200 + 1000 + 150 + 20 + 3$ | 400    | 50   | 1  | × | 8000 | 1000 | 20 | 20 | 1200 | 150 | 3 | 3 | 4 | 5 | 1 | × | 8 | 0 | 2 | 2 | 1 | 1 | 3 | 3 | 2 | 5 | 3 |  | 10 | 3 | 7 | 3 | 10 373 | 3 | M1 for complete method with relative place value correct.<br>Condone 1 multiplication error, addition not necessary.<br>M1 (dep) for addition of all appropriate elements of the calculation<br>A1 cao<br><br>OR<br><br>M1 for a complete grid. Condone 1 multiplication error, addition not necessary.<br>M1 (dep) for addition of all appropriate elements of the calculation<br>A1 cao<br><br>OR<br><br>M1 for sight of a complete portioning method, condone one multiplication error<br>M1 (dep) for addition of all the appropriate elements of the calculation<br>A1 cao<br><br>SC B1 for attempting to add exactly 23 lots of 451 |
| 400       | 50   | 1      | ×    |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 8000      | 1000   | 20     | 20   |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 1200      | 150  | 3      | 3    |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 4         | 5  | 1      | ×    |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 8         | 0  | 2      | 2    |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 1         | 1  | 3      | 3    |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 2         | 5  | 3      |      |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |
| 10        | 3  | 7      | 3    |  |   |      |      |    |    |      |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |    |   |   |   |        |   |   |



| 5384F/11F |  |                 |      |  |
|-----------|--|-----------------|------|--|
| Question  | Working  | Answer          | Mark | Notes  |
| 15        | $540 - 240 = 300$<br>$\frac{15}{100} \times 300$                                   | 45              | 3    | M1 for $540 - 240$ or 300 seen<br>M1 (dep) for $\frac{15}{100} \times '300'$ or correct method for 10% + 5% of '300'<br>A1 cao<br>SC If no marks scored award B1 for an answer of 81 or 36 |
| 16 (a)    |  |                 | 1    | B1 for fully correct answer  |
| (b)       |  | $-2 < x \leq 3$ | 2    | B2 for fully correct answer<br>(B1 for $-2 <$ or $\leq 3$ seen)  |
| (c)       | $3t + 5 > 17$<br>$3t > 17 - 5$<br>$3t > 12$  | $t > 4$         | 2    | M1 for $3t \dots 17 - 5$ or dividing throughout by 3 or sight of 4 or an attempt to move the 5<br>A1 for $t > 4$ oe  |
| 17        |  | B and E         | 2    | B2 for both correct<br>(B1 for 1 correct)  |
| 18        |  | 1 : 3           | 2    | M1 for writing ratio as 18 : 6 or 6 : 18 or 3 : 1 or 3 : 9 or 9 : 3 or 6 : 2 or 2 : 6<br>A1 cao  |

| 5384F/11F |                                  |   |      |   |
|-----------|----------------------------------|---|------|---|
| Question  | Working                          | Answer                                      | Mark | Notes   |
| 19        | $2 \frac{16}{20} - \frac{5}{20}$ | $2 \frac{11}{20}$                           | 3    | <p>M1 for dealing with whole numbers <math>3 - 1 = 2</math><br/> M1 for correct common denominator and at least one correct numerator (can be <math>\frac{16}{20}</math> or <math>\frac{5}{20}</math> if 20 used as common denominator)<br/> A1 for <math>2 \frac{11}{20}</math> oe</p> <p><b>Alternative</b><br/> M1 for <math>\frac{5 \times 3 + 4}{5} - \frac{4 \times 1 + 1}{4}</math> with at least one correct numerator<br/> M1 for correct common denominator and at least one correct numerator (can be <math>\frac{76}{20}</math> or <math>\frac{25}{20}</math> if 20 used as common denominator)<br/> A1 for <math>\frac{51}{20}</math> or <math>2 \frac{11}{20}</math> oe</p> |
| 20        |                                  | Correct construction                        | 2    | <p>M1 for two pairs of correct intersecting arcs<br/> A1 for correct perpendicular bisector<br/> SC if no marks, B1 for line within guidelines.</p>   |
| 21 (a)    |                                  |   | 3    | <p>B1 for rotation<br/> B1 for about (0,0)<br/> B1 for <math>180^\circ</math> (accept half turn)<br/> NB If more than one transformation seen than B0</p>   |
| (b)       |                                  | triangle with vertices (6, 1) (6, 4) (5, 4) | 1    | 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](mailto:publications@linneydirect.com)

Order Code UG025841 November 2010

For more information on Edexcel qualifications, please visit [www.edexcel.com/quals](http://www.edexcel.com/quals)

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