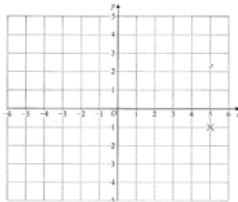


**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| 1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0 |                          |   |      |  |
|--|--------------------------|---|------|--|
| Question   | Working                  | Answer  | Mark | Notes  |
| 1.   | $1.85 \div 5 \times 9 =$ | 3.33  | 2    | M1 for $1.85 \div 5$ or $1.85 \times 9$ or 0.37 or 16.65 or 333 seen<br>A1 cao<br><b>NB</b> Working can be in £ or p |
| 2.   | (a)                      | 37  | 1    | B1 cao   |
|  | (b)                      | $a$   | 1    | B1 cao   |
| 3.   | (a)                      | (1, 2)  | 2    | B1 (allow $(x = 1, y = 2)$ )   |
|  | (i)                      | (-4, -3)  |      | B1 (allow $(x = -4, y = -3)$ )   |
|  | (ii)                     | plot(5, -1) on grid   | 1    | B1 for plotting at (5, -1)   |
|  | (b)                      |  |      |  |
| 4.   |                          | 0.6   | 3    | B1 for 1.8 seen (accept 1800)<br>M1 for “1.8” $\div 3$<br>A1 for 0.6 oe  |
| 5.   | (a)                      | Cardiff   | 1    | B1   |
|  | (b)                      | - 8   | 2    | M1 for $- 3 - 5$ or $- 3 + - 5$<br>A1  |

**1MA1 Practice Papers: Set 3 Regular (2F) mark scheme – Version 1.0**

This publication may only be reproduced in accordance with Pearson Education Limited copyright policy.  
©2016 Pearson Education Limited.

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| Question |     | Working  | Answer    | Mark | Notes   |
|----------|-----|--|-----------|------|---|
| 6.       | (a) | $1.65 + 0.80$  | 2.45      | 2    | M1 for $1.65 + 0.80$ or digits 245 seen<br>A1 for 2.45 condone £2.45p   |
|          | (b) | $1.40 + 1.40 + 0.75 + 0.80$<br>$= 4.35$<br>$4.35 < 5.00$<br>or $5.00 - 4.35 = 0.65$<br>or rounded values used<br>e.g.<br>$1.50 + 1.50 + 1 + 1 = 5$<br>All rounded up so enough money | Yes       | 3    | M1 for $1.40 + 1.40 + 0.75 + 0.80$ or 435 digits seen<br>A1 for 4.35 or digits 65<br>C1 (dep on M1) based on their 4.35<br><b>OR</b><br>M1 for addition of appropriately rounded prices<br>A1 for correct total of rounded prices.<br>C1 (dep on M1) Decision given – he has enough money |
| 7.       | (a) |  | 1.3       | 1    | B1 cao  |
|          | (b) |  | 400       | 1    | B1 cao  |
|          | (c) |  | 25        | 2    | M1 for $(90 \times 1000) \div (60 \times 60)$<br>A1 cao   |
| 8.       | (a) | 3 4 4 5 5 6 8 9 10   | 5         | 2    | M1 for ordering the 9 numbers<br>A1 cao   |
|          | (b) | $(4 + 8 + 5 + 9 + 10 + 5 + 6 + 3 + 4) \div 9$<br>$54 \div 9$   | 6         | 2    | M1 for $(4 + 8 + 5 + 9 + 10 + 5 + 6 + 3 + 4) \div 9$ or $54 \div 9$<br>A1 cao   |
| 9.       |     | $360 \div 120 \times 40$<br>120, 72, 57, 111   | pie chart | 3    | M1 method to find angle for any sector in pie chart<br>M1 correct angles for sectors <b>or</b> two sectors drawn correctly<br>A1 with angles 120, 72, 57, 111 and sectors labelled  |

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| 1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0 |     |  |              |      |  |
|--|-----|--|--------------|------|--|
| Question   |     | Working  | Answer       | Mark | Notes  |
| 10.  |     | 3kg peaches is £1.68<br>£2.34 – £1.68 = £0.66<br>£0.66 ÷ 2 = £0.33 | £0.33 or 33p | 3    | M1 $2 \times £0.84$ or digits 168 seen<br>M1(dep) digits 234 – digits “168” or digits 66 seen<br>A1 £0.33 or 33p (units consistent with answer)<br>NB: 0.33 or 33 without units M2, £0.33p, £33p M2A1                              |
| 11.  | (a) |  | 12           | 2    | M1 for $9 \times 4 \div 3$ oe<br>A1 cao  |
|  | (b) |  | 6            | 3    | M1 for a correct first step e.g. $20 \times 3 (= 60)$ or $20 \div 10 (= 2)$ or giving equation e.g. $10h \div 3 = 20$<br>M1 for complete method to give height e.g. ‘60’ ÷ 10 or ‘2’ × 3 or $h = 20 \times 3 \div 10$ oe<br>A1 cao |
| 12.  |     | $500 \times 1.2$ (oe) = 600<br>$600 \div 12 =$                     | 50           | 4    | M2 for $500 \times 1.2 (= 600)$ (oe)<br>(M1 for $500 \times 0.2 (= 100)$ (oe))<br>M1 for $600 \div 12$ or $100 \div 12$ or $1.2 \div 12$ or $500 \div 12$<br>A1 cao<br>SC: B2 for an answer of 8.33 or 8.34                        |

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| 1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0 |   |                         |      |   |
|--|---|-------------------------|------|---|
| Question   | Working   | Answer                  | Mark | Notes   |
| 13.  | (a)   | 40                      | 2    | M1<br>A1 cao  |
|  | (b)   | $\frac{9}{15}$          | 2    | M1 for 2 fractions equivalent to $\frac{1}{3}$ and $\frac{4}{15}$ with a common denominator e.g. $\frac{15}{45} + \frac{12}{45}$ <b>or</b> $\frac{15+12}{45}$<br><br>A1 dep on M1 for fraction equivalent to $\frac{9}{15}$ (but not $\frac{3}{5}$ )<br>produced directly from M1   |
| 14.  | Angle $ACB = 67^\circ$<br>$x = 180 - (67 + 67)$ | $46^\circ$ with reasons | 4    | B1 for angle $ACB = 67^\circ$ , could be marked on the diagram<br>M1 for $180 - ('67' + '67')$<br>A1 for $x = 46^\circ$<br>C1 for vertically <u>opposite angles</u> (or <u>vertically opposite angles</u> ) <b>and</b> base <u>angles</u> of an <u>isosceles</u> triangle are <u>equal</u><br><b>OR</b><br>B1 for angle $ACB = 67^\circ$ , could be marked on the diagram<br>M1 for $180 - ('67' + '67')$<br>A1 for $x = 46^\circ$<br>C1 for “ <u>angles</u> on a straight <u>line</u> add up to <u>180°</u> <b>and</b> base <u>angles</u> of an <u>isosceles</u> triangle are <u>equal</u> ” |

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| 1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0 |         |   |                 |  |   |
|--|---------|---|-----------------|--|---|
| Question   | Working | Answer  | Mark            | Notes  |   |
| 15.  |         | 29.1  | 3               | M1 use of cos<br>M1 $\cos("x") = (\text{= } 0.87\dots)$ or $(\text{"x"} =) \cos - 1 (\text{ )}$<br><b>OR</b><br>or M2 for sin and following correct Pythagoras<br>or M2 for tan and following correct Pythagoras<br>or correct Pythagoras and then correct use of sine or cosine rule with "21.36"<br>A1 for ans rounding to 29.1 (29.1103...) |   |
| 16.  | (a)     | (I cost per nail)<br>$1.36 \div 20 = 0.068,$<br>$3.30 \div 50 = 0.066,$<br>$6.03 \div 90 = 0.067$<br>(II e.g. number of nails for £1)<br>$20 \div 1.36 = 14.7,$<br>$50 \div 3.30 = 15.1,$<br>$90 \div 6.03 = 14.9$<br>(III e.g. cost for 20 nails)<br>$3.30 \div 50 \times 20 = 1.32,$<br>$6.03 \div 90 \times 20 = 1.34$<br>(IV using multipliers)<br>$50 \div 20 = 2.5$ and<br>$3.30 \div 1.36 = 2.42$<br>$90 \div 50 = 1.8$ and<br>$6.03 \div 3.30 = 1.82$ | Medium + reason | 4  | M1 for correct method to work out a unit cost for 2 boxes<br>M1 for correct method to work out a unit cost for all 3boxes<br>A1 for (£)0.068 and (£)0.066 and (£)0.067 oe<br>C1 for correct conclusion based on their figures (consistent units) (dep on at least one M1 scored)<br><b>OR</b><br>M1 for correct method to work out the number of nails for £1oe from 2 boxes<br>M1 for correct method to work out the number of nails for £1oe from all 3 boxes<br>A1 for 14.7 and 15.1 and 14.9<br>C1 for correct conclusion based on their figures (consistent units) (dep on at least one M1 scored) |

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| Question   | Working     | Answer  | Mark | Notes   |       |   |             |   |         |   |     |
|------------|-------------|---|------|---|-------|---|-------------|---|---------|---|-----|
| 16<br>cont | (b)         |   |      | <p><b>OR</b></p> <p>M1 for correct method to work out the cost of 50 nails using the 20 nails cost oe</p> <p>M1 for correct method to work out the cost of 50 nails using the 20 nails cost and 90 nails using the 20 nail cost</p> <p>A1 for (£1.36), (£)1.32, (£)1.34 oe</p> <p>C1 for correct conclusion based on their figures (dep on at least one M1 scored) (consistent units)</p> <p><b>OR</b></p> <p>M1 for correct method to compare multipliers for cost and number for 1 pair of boxes M1 for correct method to compare multipliers for cost and number for correct 2 pairs of boxes</p> <p>A1 for 2.5 and 2.42, 1.8 and 1.82</p> <p>C1 for correct conclusion based on their figures (dep on at least one M1 scored) (consistent units)</p> <p>M1 for correct stem and unordered leaves (condone two errors or omissions)</p> <p>A1 cao</p> <p>B1 for key, e.g. 2   0 means 20mm</p> |       |   |             |   |         |   |     |
|            | (c)         | <table border="1"> <tr><td>2</td><td>0 5 8</td></tr> <tr><td>3</td><td>0 0 0 5 7 9</td></tr> <tr><td>4</td><td>0 5 7 9</td></tr> <tr><td>5</td><td>0 5</td></tr> </table> | 2    |   | 0 5 8 | 3 | 0 0 0 5 7 9 | 4 | 0 5 7 9 | 5 | 0 5 |
| 2          | 0 5 8       |   |      |   |       |   |             |   |         |   |     |
| 3          | 0 0 0 5 7 9 |   |      |   |       |   |             |   |         |   |     |
| 4          | 0 5 7 9     |   |      |   |       |   |             |   |         |   |     |
| 5          | 0 5         |   |      |   |       |   |             |   |         |   |     |
|            |             | 37  | 1    | B1 cao  |       |   |             |   |         |   |     |

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| 1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0 |         |   |                        |       |  |
|--|---------|---|------------------------|-------|--|
| Question   | Working | Answer  | Mark                   | Notes |  |
| 17.  | (a)     | $x^2 + 9x - 3x - 27$  | $x^2 + 6x - 27$        | 2     | M1 for 3 out of 4 terms correct or 4 terms correct ignoring signs<br>A1  |
|  | (b)     | $v - u = at$  | $a = \frac{v-u}{t}$ oe | 2     | M1<br>A1   |
| 18.  |         |   | 20                     | 3     | M1 for establishing the volume of the container is $500 \text{ cm}^3$<br>M1 for “500” $\div (5 \times 5)$<br>A1 cao  |
| 19.  |         | $2000 \times 1.05^2 =$<br>$2000 \times 1.1025$<br><b>OR</b><br>$2000 \times 1.05 = 2100$<br>$2100 \times 1.05 = 2205$ | £2205                  | 3     | M2 $2000 \times 1.05^2$<br>(M1 $2000 \times 1.05^n, n \neq 2$ )<br>A1 cao<br><b>OR</b><br>M1 $\frac{5}{100} \times 2000$ (oe) or 100 or 200 or 2100 or 2200 seen<br>M1 (dep) $\frac{5}{100} \times (2000 + \text{“100”})$<br>A1 cao<br>SC B2 for £2315.25 seen (3 yrs) |
| 20.  |         | $\frac{1}{2} (12 + 8) \times 6 = 60$<br>‘60’ $\times 20 = 1200$<br>$1200 \times 5 = 6000$<br>$6000 \div 1000 = 6$     | 6                      | 5     | M1 $\frac{1}{2} (12 + 8) \times 6$ oe or 60 seen<br>M1 (dep) ‘60’ $\times 20$<br>M1 (indep) ‘1200’ $\times 5$<br>A1 6000 cao<br>A1 ft (dep on 1 <sup>st</sup> or 3 <sup>rd</sup> M1 scored) for 6  |

**1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0**

| <b>1MA1 Practice papers Set 3: Paper 2F (Regular) mark scheme – Version 1.0</b> |                |   |             |  |
|---|----------------|---|-------------|--|
| <b>Question</b>   | <b>Working</b> | <b>Answer</b>   | <b>Mark</b> | <b>Notes</b>   |
| 21.   |                | <p><b>“two angles are equal so the triangle is isosceles”</b></p> | 5           | <p>M1 for <math>6x - 10 + 4x + 8 + 5x + 2</math> or <math>15x</math><br/> M1 for <math>6x - 10 + 4x + 8 + 5x + 2 = 180</math> or <math>15x = 180</math><br/> or <math>(x =) 180 \div 15</math><br/> A1 <math>x = 12</math><br/> M1 (ft from '12' if M2 scored) for <math>5 \times '12' + 2</math> or <math>6 \times '12' - 10</math><br/> or <math>62(^{\circ})</math> or <math>4 \times '12' + 8</math> or <math>56(^{\circ})</math><br/> C1 both base angles as 62 and two angles are equal so the triangle is isosceles<br/> NB. <math>x = 12</math> with no working scores M0M0A0 ; correct value of <math>x</math> from clear trial and improvement could gain M1M1A1<br/> <b>OR</b><br/> M1 <math>5x + 2 = 6x - 10</math> or <math>2 + 10 = 6x - 5x</math><br/> A1 <math>x = 12</math><br/> M1 <math>5 \times 12 + 2</math> or <math>6 \times 12 - 10</math> or <math>62(^{\circ})</math> or <math>4 \times 12 + 8</math> or <math>56(^{\circ})</math><br/> M1 checking their angles add to <math>180^{\circ}</math>, “62”+”62”+”56” = 180<br/> C1 both base angles as 62 and two angles are equal so the triangle is isosceles<br/> <b>OR</b><br/> M1 <math>4x + 8 = 5x + 2</math> oe or<br/> <math>4x + 8 = 6x - 10</math><br/> A1 <math>x = 6</math> <b>or</b> <math>x = 9</math><br/> M1 (dep) for substituting ‘<math>x</math>’ into one of the angles oe<br/> M1 for showing their angles do not sum to <math>180^{\circ}</math><br/> C0</p> |



National performance data from Results Plus

| Qu No | Spec         | Paper | Session | Qu   | Topic  | Max score | Mean % all        | ALL  | C    | D    | E    | F    | G    |
|-------|--------------|-------|---------|------|--|-----------|-------------------|------|------|------|------|------|------|
| 1     | 5MM2         | 2F    | 1211    | Q19  | Ratio  | 2         | 81                | 1.61 | 1.97 | 1.86 | 1.70 | 1.41 | 1.07 |
| 2     | 5MM2         | 2F    | 1406    | Q08  | Angles   | 2         | 88                | 1.76 | 1.95 | 1.89 | 1.86 | 1.69 | 1.36 |
| 3     | 1380         | 2F    | 1011    | Q08  | Coordinates in 2D                                | 3         | 87                | 2.61 | 2.89 | 2.78 | 2.57 | 2.23 | 1.78 |
| 4     | 5AM1         | 1F    | 1506    | Q06  | Reading scales                                   | 3         | 79                | 2.37 | 2.88 | 2.76 | 2.44 | 1.55 | 0.80 |
| 5     | 4MA0         | 2F    | 1305    | Q07  | Directed numbers                                 | 3         | 85                | 2.56 | 2.87 | 2.70 | 2.41 | 1.89 | 1.31 |
| 6     | 5AM2         | 2F    | 1111    | Q08  | Money calculations                               | 5         | 82                | 4.12 | 4.66 | 4.43 | 4.71 | 4.10 | 3.15 |
| 7a    | 4MA0         | 2F    | 1401    | Q03a | Decimals   | 1         | 95                | 0.95 | 0.99 | 0.97 | 0.94 | 0.84 | 0.69 |
| 7b    | 4MA0         | 2F    | 1401    | Q03d | Decimals   | 1         | 50                | 0.50 | 0.72 | 0.44 | 0.28 | 0.21 | 0.15 |
| 7c    | NEW QUESTION |       |         |      | Decimals   | 2         | No data available |      |      |      |      |      |      |
| 8     | 1MA0         | 2F    | 1211    | Q07  | Mean, median, mode                               | 4         | 68                | 2.73 | 3.61 | 3.28 | 2.78 | 2.02 | 1.18 |
| 9     | NEW QUESTION |       |         |      | Pie chart  | 3         | No data available |      |      |      |      |      |      |
| 10    | 1387         | 2F    | 711     | Q20  | Solve linear equations                           | 3         |                   | 2.50 |      |      |      |      |      |
| 11    | 5MM2         | 2F    | 1406    | Q16  | Substitution into expressions                    | 5         | 55                | 2.73 | 4.22 | 3.49 | 2.61 | 2.02 | 0.84 |
| 12    | 5AM1         | 1F    | 1106    | Q04b | Simple interest                                  | 4         | 35                | 1.40 | 3.33 | 2.83 | 1.75 | 0.50 | 0.17 |
| 13    | 4MA0         | 2F    | 1501    | Q13  | Fractions  | 4         | 57                | 2.27 | 3.18 | 2.17 | 1.27 | 0.88 | 0.25 |
| 14    | 5AM1         | 1F    | 1211    | Q19  | Angles   | 4         | 41                | 1.64 | 3.07 | 2.17 | 1.09 | 0.39 | 0.33 |
| 15    | 4MA0         | 1F    | 1305    | Q21  | Trigonometry                                     | 3         | 46                | 1.37 | 2.21 | 1.19 | 0.69 | 0.45 | 0.15 |
| 16    | 5AM1         | 1H    | 1311    | Q04  | Ratio  | 8         | 69                | 5.54 | 5.05 | 3.88 | 3.25 |      |      |
| 17    | NEW QUESTION |       |         |      | Expand double brackets/change subject of formula | 4         | No data available |      |      |      |      |      |      |
| 18    | 5AM2         | 2F    | 1506    | Q16  | Volume   | 3         | 25                | 0.75 | 1.55 | 0.78 | 0.23 | 0.23 | 0.19 |
| 19    | 1387         | 6H    | 711     | Q07  | Compound interest                                | 3         | 77                | 2.32 | 1.46 |      |      |      |      |
| 20    | 1380         | 1H    | 1111    | Q16  | Compound measures                                | 5         | 18                | 0.91 | 0.36 | 0.09 | 0.05 |      |      |
| 21    | 5MM1         | 1H    | 1306    | Q11  | Solve linear equations                           | 5         | 53                | 2.65 | 1.44 | 0.45 | 0.00 | 0.78 | 0.00 |
|       |              |       |         |      |  | <b>80</b> |                   |      |      |      |      |      |      |