# Mark Scheme (Results)

## Summer 2019

Pearson Edexcel International GCSE
In Mathematics B (4MB1)
Paper 01R

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Summer 2019
Publications Code 4MB1_01R_2019_MS
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**General Marking Guidance**

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme.

  Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

- **Types of mark**
  - M marks: method marks
  - A marks: accuracy marks
  - B marks: unconditional accuracy marks (independent of M marks)
- **Abbreviations**
  - cao – correct answer only
  - ft – follow through
  - isw – ignore subsequent working
  - SC - special case
  - oe – or equivalent (and appropriate)

- dep – dependent
- indep – independent
- awrt – answer which rounds to
- eeoo – each error or omission

- **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.

- **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 it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks.

  If a candidate misreads a number from the question. Eg. Uses 252 instead of 255; method marks may be awarded provided the question has not been simplified. Examiners should send any instance of a suspected misread to review. 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.

  If there is no answer on the answer line then check the working for an obvious answer.

- **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: eg. Incorrect cancelling 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 eg algebra. Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

- **Parts of questions**

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

<table>
<tr><th colspan="2">Question</th><th>Working</th><th>Answer</th><th>Mark</th><th>Notes</th></tr>
<tr><td>1</td><td></td><td>60, 120, 180, 240, 300, 360, 420, 480, 540, ...<br>135, 270, 405, 540, ...<br><br>or<br><br>60 = 2×2×3×5 or 15×2×2<br>135 = 3×3×3×5 or 15×3×3<br><br>or<br><br><table><tr><td>5</td><td>60</td><td>135</td></tr><tr><td>3</td><td>12</td><td>27</td></tr><tr><td></td><td>4</td><td>9</td></tr></table></td><td></td><td></td><td>M1 for a correct list of multiples up to 540 or 60 and 135 written as a correct product of primes - factors may be on ends of trees or in ladder diagrams (so expect to see 3, 3, 3, 4 and 5 or equivalent e.g. 3, 4, 5, 9) or correct factor grid<br><br>The following is common:<br><br><table><tr><td>5</td><td>60</td><td>135</td></tr><tr><td>3</td><td>12</td><td>27</td></tr><tr><td>4</td><td>4</td><td>9</td></tr><tr><td>9</td><td>1</td><td>9</td></tr><tr><td></td><td>1</td><td>1</td></tr></table></td></tr>
<tr><td></td><td></td><td></td><td>540</td><td>2</td><td>A1</td></tr>
<tr><td colspan="2"></td><td></td><td></td><td></td><td>Total 2 marks</td></tr>
<tr><td>2</td><td></td><td>$9n - 7 = 214$</td><td></td><td></td><td>M1 or for working out the $24^{th}$ and $25^{th}$ terms</td></tr>
<tr><td></td><td></td><td></td><td>No and $n$ = 24.55... or<br>$9n = 221$ and 221 is not a multiple of 9<br>or 24th term = 209,<br>25th term = 218</td><td>2</td><td>A1 oe (e.g. No with either 24.5 or 24.6 (or better)) – for A1 must see ‘No’ + appropriate values<br><br>A0 if No and $n = \frac{221}{9}$ only<br><br>For A1 it must be explicitly clear that $n = \frac{221}{9}$ is not an integer<br><br>e.g. No and $n = \frac{221}{9}$ is not an integer/whole number is A1</td></tr>
<tr><td colspan="2"></td><td></td><td></td><td></td><td>Total 2 marks</td></tr>
</table>

| | | | | | |
|---|---|---|---|---|---|
| **3** | | | | | M1 for 24 – 18 (= 6) or $\frac{7+x}{2}=10$ oe **or** one value correctly stated |
| | | | $w = 6$<br>$x = 13$ | 2 | A1<br>SC B1 for $w = 13$, $x = 6$ |
| | | | | | ***Total 2 marks*** |
| **4** | | $\pi \times 8^2 \times 12$ | | | M1 (or for $768\pi$) |
| | | | 2413 | 2 | A1 accept answer in the range 2412 – 2413 |
| | | | | | ***Total 2 marks*** |
| **5** | | $2x = 5 \times 9 + 3$ or $\frac{2x}{5}=9+\frac{3}{5}$ | | | M1 (oe) |
| | | | 24 | 2 | A1 |
| | | | | | ***Total 2 marks*** |
| **6** | | $(-6)^2 - 4 \times -6$ oe<br>e.g. $36 - -24$ or $-6(-6-4)$ | | | M1 (must include a bracket around the –6 unless recovered later)<br>**or** for (+)36 or (+)24 seen in their working<br>M0 if –12 seen with no working<br>M0 if –12 comes from $-6^2 - 4 \times -6$ without seeing (+)24 |
| | | | 60 | 2 | A1 |
| | | | | | ***Total 2 marks*** |
| **7** | | $\frac{11}{4}\times\frac{12}{11}$ or $\frac{33}{12}\div\frac{11}{12}=\frac{33}{11}$ | | | M1 |
| | | $\frac{132}{44}=3$ **or** $\frac{1}{4}\times\frac{12}{1}=\frac{12}{4}=3$ **or** $\frac{1}{1}\times\frac{3}{1}=3$ oe<br>(cancelling of 11s and 4 and 12 seen) or<br>$\frac{33}{12}\div\frac{11}{12}=\frac{33}{11}=3$ or $\frac{11}{4}\times\frac{12}{11}=\frac{12}{4}=3$ | 3 | 2 | A1 dependent on all working seen<br>$\frac{11}{4}\times\frac{12}{11}=3$ **or** $\frac{33}{12}\times\frac{12}{11}=3$ is A0 unless explicit cancelling seen |
| | | | | | ***Total 2 marks*** |
| **8** | | | | | M1 for *ABC* = 48° or reflex *AOC* = 264° stated or marked on diagram |
| | | | 96 | 2 | A1 |
| | | | | | ***Total 2 marks*** |

| | | | | | |
|---|---|---|---|---|---|
| **9** | | | | | M1 for $12x^2$ or $14x^{-3}$ oe (e.g. $\frac{14}{x^3}$ ) |
| | | | $12x^2 + 14x^{-3}$ | 2 | A1 oe (e.g. $12x^2 + \frac{14}{x^3}$) must be + in between the two terms – mark final answer |
| | | | | | ***Total 2 marks*** |
| **10** | | | | | M1 for writing $\sqrt{100a^2} + a\sqrt{25a^2}$ or $\sqrt{20a} = 2\sqrt{5a}$ or for $10a$ or $5a^2$ |
| | | | $10a + 5a^2$ | 2 | A1 or equivalent e.g. $5a(2+a)$ but A0 if correct answer replaced with $2a + a^2$ (or other incorrect simplification) |
| | | | | | ***Total 2 marks*** |
| **11** | | (7 × 5) ÷ 4 or 5 × 7 = 4 × *CP*<br><br>oe e.g. $4CP = 35$, $\frac{5}{4} \times 7 = CP$ etc | | | M1 |
| | | | 8.75 | 2 | A1 |
| | | | | | ***Total 2 marks*** |
| **12** | | | $x \geq 1$ | | B1oe accept use of > oe (but B0 for $1 \leq x \leq 4$) |
| | | | $y \geq \frac{1}{2}x$ | | B1oe accept use of > oe (e.g. $2y \geq x$ or $y - \frac{1}{2}x \geq 0$ etc.) |
| | | | $x + y \leq 6$ | 3 | B1oe accept use of > oe (e.g. $y \leq 6 - x$ etc.) - condone for full marks inconsistent use of $>$ or $\geq$ |
| | | | | | ***Total 3 marks*** |

| | | | | | |
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| **13** | | 0.2 × 8600 (=1720) or 0.8 × 8600(=6880) | | | M1 – award M1 only for 5848 (from $8600\times0.8\times0.85$)<br>M0 for 4300 (reducing by 50%) unless first year explicitly seen (e.g. either 1720 or 6880 seen in calculation) |
| | | $0.85^2$ × "6880" | | | M1ft sight of multiplying their '6880' (which cannot be 8600 but allow for say 1720 or a different changed value) by $0.85^2$ – so a correct method for years 2 and 3 following on from their possibly incorrect year 1) **or** M2 for $0.8 \times 0.85^2 \times 8600$ |
| | | | 4970.8(0)<br>or 4971 | 3 | A1 - award M2 only for 4970 |
| | | | | | ***Total 3 marks*** |
| **14** | | $\begin{pmatrix}20 & 15\\10 & -5\end{pmatrix}+n\begin{pmatrix}4 & x\\2y & 7\end{pmatrix}$ oe | | | M1 for correct matrix sum **or** $20 + 4n = 8$ **or** $-5 + 7n = -26$ **or** $n\mathbf{B}=\begin{pmatrix}-12 & 12\\-9 & -21\end{pmatrix}$ |
| | | | $n = -3$, $x = -4$, $y = 1.5$ | 3 | A2 for all 3 values correct, A1 for 2 correct values |
| | | | | | ***Total 3 marks*** |
| **15** | (a) | $(x \times 10^5 + y \times 10^3) \div 10^5$ oe | | | M1 for dividing a correct expression in $x$ and $y$ by $10^5$ |
| | | | $x + y \times 10^{-2}$ | 2 | A1 oe (e.g. $x+\frac{y}{10^2}$ **or** $x+\frac{y}{100}$ **or** $\frac{100x+y}{100}$ **or** $\frac{10^2x+y}{10^2}$ **or** $x+0.01y$) but A0 for $(x+y)\times10^{-2}$ - mark answer line or final answer if no expression given on answer line |
| **15** | (b) | | | | M1 for $34 \times 10^{132}$ |
| | | | $3.4 \times 10^{133}$ | 2 | A1 |
| | | | | | ***Total 4 marks*** |

| | | | | | |
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| **16** | | 7.15, 7.25, 9.25, 9.35, 15.35, 15.45 | | | B1 for one of the given values, accept $7.149$ etc. |
| | | $\left(\frac{9.35}{7.15}\right)^2 \times 15.45$ | | | M1 or for $\left(\frac{UB(AE)}{LB(BD)}\right)^2 \times \left(UB(BCD)\right)$ where<br>$9.3 < UB(AE) \leq 9.35$<br>$7.15 \leq LB(BD) < 7.2$<br>$15.4 < UB(BCD) \leq 15.45$ |
| | | | 26.4 | 3 | A1 (26.4204142...) – must come from correct bounds (9.35, 7.15 and 15.45 only) – allow 26.5 |
| | | | | | ***Total 3 marks*** |
| **17** | | 67 + (180 – 123) or<br>180 − [180− (67 + (180−123)] or<br>360 − 123 – (180 – 67) or for one of<br>*EBC* = 67° *BEC*=57° *BCE* = 56° | | | M1 – angle(s) could be shown on the diagram |
| | | | 124 | | A1 |
| | | | | 4 | B2 (dependent on M1 A1) for **all** correct reasons for method used.<br>e.g. angles on a straight line, opposite angles & exterior angle (is equal to the sum of the 2 opposite interior angles) (so the word 'angle' only needs to be used once) allow symbols for 'angles' and 'triangle' and allow abbreviations for the underlined words (e.g. VOA or OA for opposite angles) **or** angles on a straight line (mentioned twice), opposite angles, angles in a triangle oe (condone 'adjacent angles on a straight line' but not 'alternate angles on a straight line') - reasons must be given alongside the corresponding working (and not just appearing somewhere in their response)<br><br>B1 (dependent on M1) for 2 correct reasons for method used |
| | | | | | ***Total 4 marks*** |
| **18** | (a) | $x + 3x + 3x - 7$ oe | | | M1 |

| | | | | | |
|---|---|---|---|---|---|
| | | $x + 3x + 3x - 7 = 56$ oe | | 2 | A1 – award if seen in working – condone incorrect simplification |
| **18** | (b) | $7x = 56 + 7$ or $x = 9$ | | | M1ft dep on 3 people's crayons (so must have three terms in $x$) – must isolate $x$ terms correctly - award this mark if $x = 9$ stated in part (a) |
| | | | 20 | 2 | A1 |
| | | | | | ***Total 4 marks*** |
| **19** | | e.g. $\frac{1}{2}(\frac{2700}{90}+4)$ or $180(n-2)=2700$<br>or (2700 + 360) ÷ 180 oe | | | M1 a fully correct method to find the number of sides |
| | | 17 (sides) | | | A1 |
| | | | 158.8 or better | 3 | A1 – note that 159 without 158.8 (or better) seen is A0 |
| | | | | | ***Total 3 marks*** |
| **20** | | $\frac{3(5\sqrt{2}-2)}{2-\sqrt{2}}$ oe | | | M1 |
| | | $\frac{3(5\sqrt{2}-2)}{2-\sqrt{2}}\times\frac{2+\sqrt{2}}{2+\sqrt{2}}$ oe | | | M1 |
| | | | $9 + 12\sqrt{2}$ | 3 | A1 dep on M2 |
| | | | | | ***Total 3 marks*** |
| **20** | ALT | $(a+b\sqrt{2})(2-\sqrt{2})=3(5\sqrt{2}-2)$<br>$(2a-2b)+(-a+2b)\sqrt{2}=-6+15\sqrt{2}$<br>$2a-2b=-6, -a+2b=15$ | | | M1 (allow one slip) – getting to simultaneous equations in $a$ and $b$ |
| | | $a-b=-3, -a+2b=15$ | | | M1dep solve simultaneous equations (see Qu21 first M mark for applying the method mark for solving simultaneous equations) |
| | | | $a=9, b=12$ | | A1 |
| **21** | | $6x + 8y = 9$ OR $9x + 12y = 13.5$ oe | | | M1 for coefficient of $x$ or $y$ the same in both equations and correct operation to |

| | | | | | |
|---|---|---|---|---|---|
| | | $\underline{6x - 9y = 34.5}$ $\quad \underline{8x - 12y = 46}$<br>$17y = -25.5$ $\quad 17x = 59.5$<br>OR<br>$x = \frac{11.5+3y}{2}$ **and** $2\left(\frac{4.5-4y}{3}\right)-3y=11$<br>OR<br>$y = \frac{4.5-3x}{4}$ **and** $2x-3\left(\frac{4.5-3x}{4}\right)=11.5$ | | | eliminate selected variable (condone one arithmetic error) **or** for correct rearrangement of one equation followed by correct substitution into the other |
| | | e.g. $3 \times 3.5 + 4y = 4.5$ **or**<br>$3x + 4 \times -1.5 = 4.5$ | | | M1dep for substituting their found value correctly into one of the correct equations **or** correct use of elimination or substitution again. |
| | | | $x = 3.5$,<br>$y = -1.5$ | 4 | First A1 dep on first M1 (so for their first value)<br>Second A1 dep on second M1 (so for their second value) |
| | | | | | ***Total 4 marks*** |
| **21** | ALT | $\begin{pmatrix}3 & 4\\2 & -3\end{pmatrix}\begin{pmatrix}x\\y\end{pmatrix}=\begin{pmatrix}4.5\\11.5\end{pmatrix}$<br>$\begin{pmatrix}3 & 4\\2 & -3\end{pmatrix}^{-1}=\frac{1}{3(-3)-2(4)}\begin{pmatrix}-3 & -4\\-2 & 3\end{pmatrix}$ | | | M1 for inverse of correct 2 by 2 matrix (allow one slip only) |
| | | $-\frac{1}{17}\begin{pmatrix}-3 & -4\\-2 & 3\end{pmatrix}\begin{pmatrix}4.5\\11.5\end{pmatrix}=-\frac{1}{17}\begin{pmatrix}-59.5\\25.5\end{pmatrix}$ | | | M1dep multiplying their inverse by $\begin{pmatrix}4.5\\11.5\end{pmatrix}$ to obtain at least a 2 by 1 matrix |
| | | | $x = 3.5$,<br>$y = -1.5$ | | A2 (A1 for one correct value) |
| **22** | | | | | M1 for *EC* = *DB* **together with** *D* and *E* are <u>midpoints</u> (oe e.g. middle but must be in words and not just shown algebraically) **and** one of: <u>equal</u> <u>sides</u> **or** |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | mention isosceles or $AB = AC$ |
| | | | | | M1 for $BC$ common side or $BC = BC$ or $BC = CB$ |
| | | | | | M1 for $\angle DBC = \angle ECB$ (oe e.g. $\angle ABC = \angle ACB$) together with base angles in an isosceles triangle are equal<br><br>All M marks are independent of each other but reasons must be given alongside the corresponding result (and not just appearing somewhere in their response) |
| | | | SAS | 4 | A1 for all correct reasons stated and SAS (dependent on all previous M marks) |
| | | | | | ***Total 4 marks*** |
| **23** | | $\frac{(3^3)^{3x}}{(3^2)^y} = 3^{2x+x+1}$ | | | M1 for one of $(3^3)^{3x}$ **or** $(3^2)^y$ **or** $3^{2x+x+1}$ (or better) |
| | | $\frac{(3^3)^{3x}}{(3^2)^y} = 3^{2x+x+1}$ | | | M1 for all of three of $(3^3)^{3x}$, $(3^2)^y$ and $3^{2x+x+1}$ (or better) |
| | | $9x - 2y = 3x + 1$ | | | M1 for $\alpha x - \beta y = 2x + x + 1$ (oe) with **either** $\alpha = 9$ **or** $\beta = 2$ (so dependent on first M mark only) |
| | | | $y = \frac{6x-1}{2}$ | 4 | A1 oe |
| | | | | | ***Total 4 marks*** |
| **24** | (a) | | Correct bisector | 2 | B2 correct perpendicular bisector of $AB$, with 2 sets of arcs and bisector drawn<br>B1 for 2 sets of arcs with no line drawn or for a bisector drawn without arcs |
| | | | | | M1 for a correct bearing of 250° drawn |
| **24** | (b) | | $C$ correctly | 2 | A1 for $C$ in the correct position |

| | | | | | |
|---|---|---|---|---|---|
| | | | positioned | | |
| **24** | (c) | | 210 – 230 Inclusive | 1 | B1 |
| | | | | | ***Total 5 marks*** |
| **25** | | $y = -\frac{5}{4}x(+4)$ or gradient = $-\frac{5}{4}$ | | | M1 or for 5 × 8 + 4 × 15 (=100) |
| | | $y = -\frac{5}{4}x + 25$<br>or $5x + 4y = 100$<br>or $y - 15 = -\frac{5}{4}(x - 8)$ (oe) | | | A1 for any correct form of the equation of the parallel line – or for one correct value (20 or 25) seen (if working shown then it must be correct) |
| | | *A*(20, 0) and *B*(0, 25) | | | A1 for 20 and 25 (condone if 25 stated as *A* and 20 as *B*) – *A* and *B* do not need to be given as coordinates |
| | | $\sqrt{20^2 + 25^2}$ | | | M1 – correct method for finding their *AB* from their found values – using their equation **but not from** $5x + 4y = 16$ **(independent of previous M mark)** |
| | | | 32 | 5 | A1 (awrt) |
| | | | | | ***Total 5 marks*** |
| **26** | (a) | Use of 0.5 in the factor theorem | | | M1 |
| | | $6 \times 0.5^3 + 23 \times 0.5^2 - 5 \times 0.5 - 4 = 0$ | Shown | 2 | A1 – must have = 0 |
| **26** | (b) | $(3x^2 .....)$ | | | M1 |
| | | $(3x^2 + 13x + 4)$ | | | A1 for correct 3TQ (correct 3TQ implies previous M mark) |
| | | $(3x + 1)(x + 4)(=0)$ | | | M1 a correct method to solve their 3TQ (that is must have $(3x + a)(x + b)$ |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | with $ab = 4$ or $3b + a = 13$ for their 4 and 13) – or correct substitution into correct formula - dependent on first M mark |
| | | | $-\frac{1}{3}$, −4 only | 4 | A1dep both solutions and no extra solutions (e.g. A0 if $\frac{1}{2}$ included)<br><br>Condone for the first three marks if a factor of (2*x* – 1) is retained throughout |
| | | | | | ***Total 6 marks*** |
| **27** | | (*AC*²=)7.2² + 9² − 2 × 7.2 × 9 × cos(128°) | | | M1 (correct application of cosine rule – condone if stated as *AC*) |
| | | $\sqrt{212.6...}$ (=14.58...) | | | A1 |
| | | $\frac{\sin CAD}{6.4} = \frac{\sin 85^o}{"14.58..."}$ (*CAD* = 25.9...) | | | M1 or for $AC^2 = AD^2 + 6.4^2 - 2(AD)(6.4)\cos 85^o$ (oe complete method with *AD* in cosine rule) with their *AC* substituted<br>$(AD^2 - 1.1155903507AD - 171.6697272 = 0$<br>*AD* = (13.6(719426)))<br><br>**dependent on previous M mark** |
| | | 0.5 × 7.2 × 9 × sin(128°)(=25.5...) | | | M1 (correct application of 0.5*ab*sin *C* for triangle *ABC*) – independent of previous M marks |
| | | 0.5 × 7.2 × 9 × sin(128°) +<br>0.5 × 6.4 × "14.58..." × sin(180 – 85 − "25.9...")<br>25.5... + 43.5..... | | | M1 for adding the areas of their two triangles together – **dependent on all previous M marks**<br>(oe for triangle *ACD* e.g. 0.5 × 6.4 × "13.6" × $\sin 85^o$) |
| | | | 69.1 | 6 | A1 accept answers in range 69.0 – 69.1 |
| | | | | | ***Total 6 marks*** |
| **28** | (a) | 2.5 × 8 + 12.5 × 10 + 25 × 15 + 35 × 17 + 50 × 25<br>20 + 125 + 375 + 595 + 1250 (= 2365) | | | M2 (Condone any one error only) if not M2 then<br>award M1 for multiplication of all midpoints by frequencies (without addition) or multiplication of frequencies by one end of interval consistently and addition |
| | | "2365" ÷ 75 | | | M1ft dep on M1 |
| | | | 31.5 | 4 | A1 (31.5 or better) |
| **28** | (b) | | | | M1 for 30 × 1cm² = 75 cars or correct frequency densities (2.4, 2.7 and 0.9) either stated by table or labelled on histogram or one correct value in table |

| | | | | | |
|---|---|---|---|---|---|
| | | | Correct values in table | | A1 correct values of 30 and 45 in table |
| | | 2.4, 2.7, 0.9 | | | M1 two correct bars in histogram – must be using 2 cm = a frequency density of 1 if vertical axis not labelled (however, if vertical axis is labelled it must be correct) |
| | | | Correctly completed histogram | 4 | A1 including frequency density axis labelled correctly (2 cm is equivalent to 1 unit) – note that a single value on the vertical axis is sufficient - heights of the bars are 2.4 (between 0 and 5), 2.7 (between 30 and 40) and 0.9 (between 40 and 60) |
| | | | | | ***Total 8 marks*** |
| 29 | (a) | $P = \frac{k}{w^2}$ | | | M1 |
| | | $16 = \frac{k}{5^2}$ or $k = 400$ | | | A1 |
| | | | 2.56 | 3 | A1 |
| 29 | (b) | $P = \frac{k}{y}$, $75 = \frac{k}{4} \rightarrow k = 300$ | | | M1 – obtaining correct value of $k$ |
| | | $P = \frac{'400'}{4} = 100$ and '300' ÷ '100' or $\frac{w^2}{'400'} = \frac{y}{'300'}$ and '300' ÷ '100' oe | | | M1 dependent on both previous M marks (in (a) and (b)) |
| | | | 3 | 3 | A1 |
| | | | | | ***Total 6 marks*** |

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