

Practice Tests Set 16 – Paper 1H mark scheme, performance data and suggested grade boundaries

| Q     | Working | Answer             | Mark | Notes                |
|-------|---------|--------------------|------|----------------------|
| 1 (a) |         | $2.84 \times 10^9$ | 1    | B1                   |
| (b)   |         | 0.000 25           | 1    | B1                   |
|       |         |                    |      | <b>Total 2 marks</b> |

|       |   |                 |   |   |
|-------|---|-----------------|---|---|
| 2 (a) |   | $5y^3(3y + 4u)$ | 2 | B2 for $5y^3(3y + 4u)$<br><br>(B1 for $5y(3y^3 + 4uy^2)$<br>or $5y^2(3y^2 + 4uy)$<br>or $y^2(15y^2 + 20uy)$<br>or $y^3(15y + 20u)$<br>or $5y^3(\dots)$ where there is only one mistake in the brackets) |
| (b)   | $4 \times (4 - 3x) = 5 - 8x$ oe<br>or $16 - 12x = 5 - 8x$ oe<br><br>$4 - 3x = \frac{5}{4} - 2x$<br>or |                 | 3 | M1 for removal of fraction in a correct equation  |
|       | e.g. $16 - 5 = 12x - 8x$<br>or $11 = 4x$ oe<br><br>$4 - \frac{5}{4} = 3x - 2x$<br>or                  |                 |   | M1 for terms in x on one side and numbers on the other side in an equation, allow correct rearrangement of their equation in the form $ax + b = cx + d$   |
|       |   | 2.75            |   | A1 $2\frac{3}{4}$ or $\frac{11}{4}$<br>(dep on M1) oe e.g.  |
|       |   |                 |   | Total 5 marks   |

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|          |        |                      |                  |   |   |
|----------|--------|----------------------|------------------|---|---|
| <b>3</b> | (a)    |                      | $16x^{12}y^{20}$ | 2 | B2 B1 for an answer in the form $ax^ny^m$ with 2 correct from $a = 16, n = 12, m = 20$        |
|          | (b)(i) | $(x \pm 9)(x \pm 4)$ |                  | 2 | M1 for $(x \pm 9)(x \pm 4)$<br><b>or</b> for $(x + a)(x + b)$ where $ab = -36$ or $a + b = 5$ |
|          |        |                      | $(x + 9)(x - 4)$ |   | A1  |
|          | (ii)   |                      | $-9, 4$          | 1 | B1 ft from (b)(i)   |
|          |        |                      |                  |   | <b>Total 5 marks</b>  |

|          |     |   |      |   |   |
|----------|-----|---|------|---|---|
| <b>4</b> | (a) | $0.6 \times 0.9$  |      | 2 | M1 oe   |
|          |     |   | 0.54 |   | A1 oe e.g. $\frac{27}{50}, \frac{54}{100}, 54\%$              |
|          | (b) | $0.6 \times 0.1 (= 0.06)$<br><b>or</b> $0.4 \times 0.25 (= 0.1)$<br><b>or</b> $0.4 \times 0.75 (= 0.3)$ |      | 3 | M1 oe   |
|          |     | $0.6 \times 0.1 + 0.4 \times 0.25$<br><b>or</b> $1 - (0.4 \times 0.75) - "0.54"$                        |      |   | M1 oe, ft their answer from (a)                               |
|          |     |   | 0.16 |   | A1 oe e.g. $\frac{4}{25}, \frac{8}{50}, \frac{16}{100}, 16\%$ |
|          |     |   |      |   | <b>Total 5 marks</b>  |

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|      |        |  |              |   |   |
|------|--------|--|--------------|---|---|
| 5    | (a)    | $8x^2 + 20x - 6x^2 + 9x$   | $2x^2 + 29x$ | 2   | M1 3 correct terms or all 4 terms condoning incorrect signs   |
|      |        |  |              |   | A1  |
|      | (b)    | eg $y^5 \times y^n = y^{19}$ or $y^{-1} \times y^n = y^{13}$ or $5 + n - 6 = 13$ | 14           | 2   | M1 Use of 1 rule of indices or a correct linear equation in $n$   |
|      |        |  |              |   | A1 Accept $y^{14}$  |
|      | (c)(i) | $7t - 2t < 7 + 8$ oe eg $5t < 15$ oe   | $t < 3$      | 2   | M1 Terms in $t$ on one side and number terms the other side – may be in an equation or the incorrect inequality sign or an answer of $t = 3$ or eg $t \geq 3$ |
|      |        | A1   |              |   |   |
| (ii) |        | open circle at $t = 3$ and a line with an arrow to the left                      | 1            | B1ft ft their inequality<br>Allow a line without an arrow if it reaches to at least $-5$ , with an arrow it can be any length |   |
|      |        |  |              |   | <b>Total 7 marks</b>  |

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|                      |   |                      |   |  |
|----------------------|---|----------------------|---|--|
| 6                    | $2x(x-5) = 2x^2 - 10x$<br><b>or</b> $2x(x-3) = 2x^2 - 6x$<br><b>or</b> $(x-5)(x-3) = x^2 - 5x - 3x + 15 (= x^2 - 8x + 15)$  |                      | 3 | M1 for multiplying $2x$ by a bracket with both terms correct <b>or</b> the 2 brackets with at least 3 out of 4 terms correct or at least 2 out of 3 terms correct  |
|                      | $(2x^2 - 10x)(x-3) = 2x^3 - 6x^2 - 10x^2 + 30x$<br><b>or</b> $(2x^2 - 6x)(x-5) = 2x^3 - 10x^2 - 6x^2 + 30x$<br><b>or</b> $2x(x^2 - 5x - 3x + 15) = 2x^3 - 10x^2 - 6x^2 + 30x$<br><b>or</b> $2x(x^2 - 8x + 15) = 2x^3 - 16x^2 + 30x$ |                      |   | M1 (dep) for multiplying the product of $2x$ and the 1 <sup>st</sup> bracket (ft from the 1 <sup>st</sup> stage) by the 2 <sup>nd</sup> bracket and getting at least 3 out of 4 terms correct<br><b>or</b> multiplying the product of the 2 brackets (ft from the 1 <sup>st</sup> stage) by the $2x$ , and getting at least 3 out of 4 or 2 out of 3 terms correct |
|                      |   | $2x^3 - 16x^2 + 30x$ |   | A1   |
| <b>Total 3 marks</b> |   |                      |   |  |

|                      |        |  |                |   |   |
|----------------------|--------|--|----------------|---|---|
| 7                    | (a)(i) |  | Correct line   | 1 | B1 For $x = 1.5$ drawn  |
|                      | (ii)   |  | Correct line   | 1 | B1 For $y = x$ drawn  |
|                      | (iii)  |  | Correct line   | 1 | B1 For $x + y = 6$ drawn  |
|                      | (b)    |  | Correct region | 1 | B1 dep on B3 for correctly indicating the region <b>R</b><br>accept unlabelled or unshaded if clear.<br>Shading can be 'in' or 'out'. |
| <b>Total 4 marks</b> |        |  |                |   |   |

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|          |      |  |                        |   |                      |
|----------|------|--|------------------------|---|----------------------|
| <b>8</b> | (i)  |  | 21, 27                 | 1 | B1                   |
|          | (ii) |  | 21, 23, 24, 25, 27, 29 | 1 | B1                   |
|          |      |  |                        |   | <b>Total 2 marks</b> |

|          |  |  |   |   |  |
|----------|--|--|---|---|--|
| <b>9</b> |  |  | 3, 7, 8, 8<br>and one of<br>4 or 5 or 6 | 3 | B3 For a list of 5 correct numbers<br><br>(B2 for a list of 5 numbers with 2 of:<br>median of 7, mode of 8, range of 5<br><br>B1 for a list of 5 or 6 numbers with 1<br>of:<br>median of 7, mode of 8, range of 5) |
|          |  |  |   |   | <b>Total 3 marks</b>   |

|           |     |   |                            |   |   |
|-----------|-----|---|----------------------------|---|---|
| <b>10</b> | (b) | $p^2 = \frac{ac+8}{3+c}$                                |                            | 4 | M1 for removing square root   |
|           |     | $3p^2 + cp^2 = ac + 8$                                  |                            |   | M1 for multiplying by denominator and expanding in a correct equation   |
|           |     | $cp^2 - ac = 8 - 3p^2$ <b>or</b> $3p^2 - 8 = ac - cp^2$ |                            |   | M1ft for gathering terms in $c$ on one side and other terms the other side<br>ft their equation dep on 2 terms in $c$ and two other terms |
|           |     |   | $c = \frac{8-3p^2}{p^2-a}$ |   | A1<br>or $c = \frac{3p^2-8}{a-p^2}$   |
|           |     |   |                            |   | <b>Total 4 marks</b>  |

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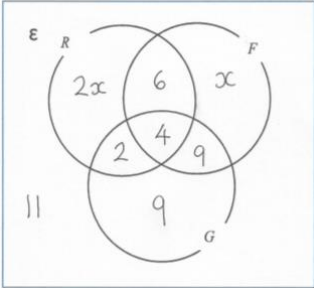
|           |     |   |               |   |   |
|-----------|-----|---|---------------|---|---|
| <b>11</b> | (a) | $\frac{8-4}{5-9} \left( = \frac{12}{-4} \right)$ oe or $\frac{-4-8}{9-5} \left( = \frac{-12}{4} \right)$ oe |               | 2 | M1 condone correct gradient embedded in an equation e.g. $y = -3x + c$<br>or expression e.g. $-3x$<br>or for an answer of 3 |
|           |     |   | -3            |   | A1  |
|           | (b) |   | $\frac{1}{4}$ | 1 | B1 accept 0.25 or $-\frac{1}{-4}$ oe  |
|           |     |   |               |   | <b>Total 3 marks</b>  |

|           |  |  |   |   |  |
|-----------|--|--|---|---|--|
| <b>12</b> |  |  | $2^4 \times 3^2 \times 5^4 \times 11 \times 13$ | 2 | B2 (B1 for 12 870 000 or correct unsimplified product or $2^m \times 3^n \times 5^p \times 11 \times 13$ with at least 1 of $m, n$ or $p$ correct or for $2^4 \times 3^2 \times 5^4$ ) |
|           |  |  |   |   | <b>Total 2 marks</b>   |

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|    |  |                           |   |  |
|----|--|---------------------------|---|--|
| 13 | $\frac{4(x+1)-3(x-2)}{(x-2)(x+1)}$ <p>or</p> $\frac{4(x+1)}{(x-2)(x+1)} - \frac{3(x-2)}{(x-2)(x+1)}$ |                           | 3 | M1 for expressing both fractions correctly with a common denominator.  |
|    | $\frac{4x+4-3x+6}{(x-2)(x+1)}$ <p>or</p> $\frac{4x+4-3x+6}{x^2-x-2}$                                 |                           |   | M1 for removing brackets in a single fraction with a correct denominator. Allow denominator to be expanded. Allow one error in the expansion of the numerator. |
|    |  | $\frac{x+10}{(x-2)(x+1)}$ |   | A1 accept $\frac{x+10}{x^2-x-2}$ oe  |
|    |  |                           |   | <b>Total 3 marks</b>   |

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|    |     |   |    |   |  |
|----|-----|---|----|---|--|
| 14 | (a) |  |    | 3 | B3 For all sections completed correctly (B2 for 5 or 6 sections correct (excl x), B1 for 3 or 4 sections correct (excl x) )  |
|    | (b) | $2x + 6 + x + 2 + 4 + 9 + 9 + 11 = 80$ $(80 - 6 - 2 - 4 - 9 - 9 - 11) \div 3$     |    | 3 | M1ft ft their Venn diagram<br>A correct equation to find x or subtracting all numerical values from 80 and dividing by 3 or other fully correct method to find x with all sections completed |
|    |     | x = 13  |    |   | A1 correct value for x   |
|    |     |   | 38 |   | B1 their $2x + 12$   |
|    |     |   |    |   | Total 6 marks  |



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|    |  |  |           |   |                      |  |
|----|--|--|-----------|---|----------------------|--|
| 15 |  | (definition of part: there are 3 parts: one part is the number, one part the letter $t$ and one part the letter $w$<br>Definition of terms: there are 6 terms: 2 number terms, 2 terms in $t$ and 2 terms in $w$ ) |           | 3 | M1                   | Fully correct cancellation of any two parts of their fraction at any stage of working                |
|    |  |  |           |   | indep                |  |
|    |  |  |           |   | M1                   | correctly apply the negative power to the whole of their bracket (all parts or all terms)            |
|    |  |  |           |   | indep                | or<br>correctly square all parts or terms of their bracket   |
|    |  |  |           |   | or                   | correctly apply the negative power AND square of at least two parts (maybe 4 terms) of their bracket |
|    |  |  | $4t^4w^2$ |   | A1                   | Allow $(2t^2w)^2$ after the correct answer   |
|    |  | <b>ALTERNATIVE</b>   |           |   |                      |  |
|    |  |  |           | 3 | M2                   | 2 correct terms (M1 for 1 correct term)  |
|    |  |  | $4t^4w^2$ |   | A1                   | Allow $(2t^2w)^2$ after the correct answer   |
|    |  |  |           |   | <b>Total 3 marks</b> |  |

|    |  |        |   |   |                      |                        |
|----|--|--------|---|---|----------------------|------------------------|
| 16 |  | 13 – 4 |   | 2 | M1                   | For selecting 4 and 13 |
|    |  |        |   |   | A1                   |                        |
|    |  |        | 9 |   | <b>Total 2 marks</b> |                        |

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|    |  |                        |   |   |
|----|--|------------------------|---|---|
| 17 | E.g.<br>$\frac{2}{6-3\sqrt{2}} \times \frac{6+3\sqrt{2}}{6+3\sqrt{2}} \text{ or}$ $\frac{2}{6-3\sqrt{2}} \times \frac{-6-3\sqrt{2}}{-6-3\sqrt{2}}$   |                        | 3 | M1 for rationalising the denominator by multiplying numerator and denominator by $6+3\sqrt{2}$ (or $-6-3\sqrt{2}$ ) |
|    | $\frac{12+6\sqrt{2}}{36-18\sqrt{2}+18\sqrt{2}-18} \text{ or}$ $\frac{12+6\sqrt{2}}{18} \text{ or } \frac{12+6\sqrt{2}}{6^2-(3\sqrt{2})^2} \text{ or } \frac{12+6\sqrt{2}}{6^2-9 \times 2}$ |                        |   | M1 (numerator may be expanded or denominator may be 4 terms which need to be all correct)                           |
|    |  | $\frac{2+\sqrt{2}}{3}$ |   | A1 or for stating $a = 2$ and $b = 3$<br>$\frac{2+\sqrt{2}}{3}$<br>for 3 from correct working dep on M2             |
|    |  |                        |   | Total 5 marks   |
| 18 | e.g. $40+8\sqrt{x}-5\sqrt{x}-\sqrt{x}\sqrt{x}$<br>or $40+8\sqrt{x}-5\sqrt{x}-(\sqrt{x})^2$<br>or $40+8\sqrt{x}-5\sqrt{x}-x$<br>or $40+3\sqrt{x}-x$   |                        | 3 | M1 for a correct expansion with at least 3 out of 4 terms correct or all 3 terms correct                            |
|    |  | $x = 19$               |   | A1 (dep on M1) for $x = 19$   |
|    |  | $y = 3$                |   | B1 for $y = 3$  |
|    |  |                        |   | Total 3 marks   |

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|           |     |  |                       |   |   |
|-----------|-----|--|-----------------------|---|---|
| <b>19</b> | (a) |  | 1                     | 1 | B1  |
|           | (b) | $3 \times 10^{125} + 2 \times 10^{124}$ <b>or</b> digits $1024 \times 10^n$ oe   |                       | 3 | M1  |
|           |     | $32 \times 10^{124}$ <b>or</b> $3 \times 10^{125} + 0.2 \times 10^{125}$ <b>or</b><br>$30 \times 10^{124} + 2 \times 10^{124}$ |                       |   | M1 oe ‘correct’ answer in incorrect form. |
|           |     |  | $3.2 \times 10^{125}$ |   | A1  |
|           |     |  |                       |   | <b>Total 4 marks</b>                      |

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|    |  |  |  |   |
|----|--|--|--|---|
| 20 | $(1-2y)^2 - 9y - (1-2y) = 2y^2 - 12$   | $x^2 - 9\left(\frac{1-x}{2}\right) - x = 2\left(\frac{1-x}{2}\right)^2 - 12$   | 5  | M1 substitution of linear equation into quadratic   |
|    | e.g. $2y^2 - 11y + 12 (= 0)$ oe<br>allow $2y^2 - 11y = -12$ oe   | e.g. $x^2 + 9x + 14 (= 0)$ oe<br>allow $x^2 + 9x = -14$ oe   |  | A1 (dep on M1) writing the correct quadratic expression in the form $ax^2 + bx + c (= 0)$<br><br>allow $ax^2 + bx = c$  |
|    | e.g. $(2y-3)(y-4)(=0)$<br><br>$(y = ) \frac{11 \pm \sqrt{(-11)^2 - 4 \times 2 \times 12}}{2 \times 2}$<br><br>e.g. $2 \left[ \left( y - \frac{11}{4} \right)^2 - \left( \frac{11}{4} \right)^2 \right] = -12$ oe | e.g. $(x+7)(x+2)(=0)$<br><br>$(x = ) \frac{-9 \pm \sqrt{9^2 - 4 \times 1 \times 14}}{2}$<br><br>e.g. $\left( x + \frac{9}{2} \right)^2 - \left( \frac{9}{2} \right)^2 = -14$ |  | M1 (dep on M1) for a complete method to solve their 3-term quadratic equation (allow one sign error and some simplification – allow as far as $\frac{11 \pm \sqrt{121 - 72}}{4}$ or $\frac{-9 \pm \sqrt{81 - 56}}{2}$ ) |
|    | $y = \frac{3}{2}$ oe and $y = 4$   | $x = -7$ and $x = -2$  |  | A1 (dep on M1) both $x$ -values<br><b>or</b> both $y$ -values   |
|    |  |  | $x = -2,$<br>$y = \frac{3}{2}$ oe<br>and<br>$x = -7,$<br>$y = 4$ | A1 (dep on first M1) must be paired correctly   |
|    |  |  |  | <b>Total 5 marks</b>  |

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|    |  |       |   |   |
|----|--|-------|---|---|
| 21 | $\overrightarrow{AB} = 2\mathbf{b} - 2\mathbf{a}$ oe or $\overrightarrow{BA} = 2\mathbf{a} - 2\mathbf{b}$ oe or $\overrightarrow{AM} = \mathbf{b} - \mathbf{a}$ oe or $\overrightarrow{MA} = \mathbf{a} - \mathbf{b}$ oe<br>or $\overrightarrow{BM} = \mathbf{b} - \mathbf{a}$ oe or $\overrightarrow{MB} = \mathbf{a} - \mathbf{b}$ oe  |       | 6 | M1 for finding $\overrightarrow{AB}$ or $\overrightarrow{BA}$ or $\overrightarrow{AM}$ or $\overrightarrow{MA}$ or $\overrightarrow{BM}$ or $\overrightarrow{MB}$ |
|    | e.g. $\overrightarrow{OM} = 2\mathbf{a} + (\mathbf{b} - \mathbf{a}) (= \mathbf{a} + \mathbf{b})$ oe or $\overrightarrow{MO} = (\mathbf{b} - \mathbf{a}) - 2\mathbf{b} (= -\mathbf{a} - \mathbf{b})$ oe<br>or $\overrightarrow{AN} = \frac{4}{3}\mathbf{b} - 2\mathbf{a}$ oe or $\overrightarrow{NA} = 2\mathbf{a} - \frac{4}{3}\mathbf{b}$ oe  |       |   | M1 for finding $\overrightarrow{OM}$ or $\overrightarrow{MO}$ or $\overrightarrow{AN}$ or $\overrightarrow{NA}$   |
|    | e.g. $\overrightarrow{OP} = 2\mathbf{a} + \lambda\left(\frac{4}{3}\mathbf{b} - 2\mathbf{a}\right)$ oe or $\overrightarrow{OP} = \frac{4}{3}\mathbf{b} + \lambda\left(2\mathbf{a} - \frac{4}{3}\mathbf{b}\right)$ oe<br>or $\overrightarrow{OP} = \mu(\mathbf{a} + \mathbf{b})$ oe OR $\overrightarrow{MP} = \mathbf{a} - \mathbf{b} + k\left(\frac{4}{3}\mathbf{b} - 2\mathbf{a}\right)$ oe<br>or $\overrightarrow{MP} = \mathbf{b} - \mathbf{a} - \frac{2}{3}\mathbf{b} + k\left(2\mathbf{a} - \frac{4}{3}\mathbf{b}\right)$ oe or $\overrightarrow{MP} = t(-\mathbf{a} - \mathbf{b})$ oe |       |   | M1 for finding $\overrightarrow{OP}$ or $\overrightarrow{PO}$ or $\overrightarrow{MP}$ or $\overrightarrow{PM}$   |
|    | e.g. $2\mathbf{a} + \lambda\left(\frac{4}{3}\mathbf{b} - 2\mathbf{a}\right) = \mu(\mathbf{a} + \mathbf{b})$ oe or $\frac{4}{3}\mathbf{b} + \lambda\left(2\mathbf{a} - \frac{4}{3}\mathbf{b}\right) = \mu(\mathbf{a} + \mathbf{b})$ oe<br>or $\mathbf{a} - \mathbf{b} + k\left(\frac{4}{3}\mathbf{b} - 2\mathbf{a}\right) = t(-\mathbf{a} - \mathbf{b})$ oe or<br>$\mathbf{b} - \mathbf{a} - \frac{2}{3}\mathbf{b} + k\left(2\mathbf{a} - \frac{4}{3}\mathbf{b}\right) = t(-\mathbf{a} - \mathbf{b})$ oe  |       |   | M1 for setting up an equation for $\overrightarrow{OP}$ or $\overrightarrow{MP}$  |
|    | $\mu = \frac{4}{5}$ or $t = \frac{1}{5}$   |       |   | M1 for finding $\mu$ or $t$ for either $\overrightarrow{OP} = \mu\overrightarrow{OM}$ or $\overrightarrow{MP} = t\overrightarrow{MO}$                             |
|    |  | 4 : 1 |   | A1 cao (dep on M3)  |
|    |  |       |   | <b>Total 6 marks</b>  |

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| Qn | Paper | Question | Mean score   | Max score | Mean % | Edexcel averages: scores of candidates who achieved grade: |              |              |              |              |              |              |             |             |
|----|-------|----------|--------------|-----------|--------|--|--------------|--------------|--------------|--------------|--------------|--------------|-------------|-------------|
|    |       |          |              |           |        | ALL  | 9            | 8            | 7            | 6            | 5            | 4            | 3           | U           |
| 1  | 1H    | Q06      | 1.70         | 2         | 85     | 1.70   | 1.99         | 1.92         | 1.88         | 1.76         | 1.62         | 1.22         | 0.80        | 0.29        |
| 2  | 1H    | Q05      | 3.82         | 5         | 76     | 3.82   | 4.89         | 4.80         | 4.39         | 3.82         | 3.07         | 1.82         | 1.12        | 0.10        |
| 3  | 1H    | Q09      | 3.74         | 5         | 75     | 3.74   | 4.92         | 4.70         | 4.36         | 3.59         | 2.98         | 1.66         | 1.00        | 0.34        |
| 4  | 1H    | Q14      | 3.47         | 5         | 69     | 3.47   | 4.91         | 4.63         | 4.35         | 3.32         | 1.96         | 0.86         | 0.58        | 0.07        |
| 5  | 2H    | Q05      | 5.18         | 7         | 74     | 5.18   | 6.61         | 6.15         | 5.70         | 4.99         | 4.47         | 3.07         | 1.86        | 0.51        |
| 6  | 1H    | Q12b     | 2.00         | 3         | 67     | 2.00   | 2.82         | 2.61         | 2.39         | 2.00         | 1.20         | 0.60         | 0.33        | 0.01        |
| 7  | 2H    | Q04      | 2.63         | 4         | 66     | 2.63   | 3.91         | 3.56         | 3.02         | 2.16         | 1.52         | 0.88         | 0.45        | 0.22        |
| 8  | 1H    | Q04      | 1.37         | 2         | 69     | 1.37   | 1.86         | 1.74         | 1.47         | 1.23         | 1.02         | 0.69         | 0.42        | 0.11        |
| 9  | 2H    | Q02      | 1.98         | 3         | 66     | 1.98   | 2.72         | 2.45         | 2.18         | 1.67         | 1.61         | 1.12         | 0.46        | 0.16        |
| 10 | 2H    | Q14b     | 2.24         | 4         | 56     | 2.24   | 3.79         | 3.15         | 2.43         | 1.58         | 0.90         | 0.41         | 0.14        | 0.06        |
| 11 | 1H    | Q13      | 1.66         | 3         | 55     | 1.66   | 2.74         | 2.29         | 1.78         | 1.23         | 0.87         | 0.25         | 0.26        | 0.04        |
| 12 | 2H    | Q09      | 1.02         | 2         | 51     | 1.02   | 1.74         | 1.37         | 1.14         | 0.63         | 0.49         | 0.27         | 0.18        | 0.01        |
| 13 | 1H    | Q12a     | 1.57         | 3         | 52     | 1.57   | 2.72         | 2.17         | 1.66         | 1.14         | 0.69         | 0.21         | 0.03        | 0.00        |
| 14 | 2H    | Q16      | 3.05         | 6         | 51     | 3.05   | 5.00         | 4.33         | 3.07         | 2.30         | 1.47         | 0.80         | 0.31        | 0.09        |
| 15 | 2H    | Q11      | 1.58         | 3         | 53     | 1.58   | 2.59         | 2.03         | 1.51         | 1.25         | 0.93         | 0.56         | 0.33        | 0.06        |
| 16 | 2H    | Q12      | 1.00         | 2         | 50     | 1.00   | 1.59         | 1.24         | 1.00         | 0.86         | 0.64         | 0.32         | 0.17        | 0.01        |
| 17 | 1HR   | Q15b     | 1.74         | 3         | 58     | 1.74   | 2.73         | 1.99         | 1.20         | 0.65         | 0.14         | 0.11         | 0.00        | 0.00        |
| 18 | 1H    | Q18      | 1.19         | 3         | 40     | 1.19   | 2.37         | 1.55         | 1.13         | 0.73         | 0.39         | 0.15         | 0.04        | 0.01        |
| 19 | 2H    | Q06      | 1.58         | 4         | 40     | 1.58   | 2.77         | 1.83         | 1.46         | 1.14         | 0.89         | 0.67         | 0.46        | 0.24        |
| 20 | 1H    | Q19      | 1.29         | 5         | 26     | 1.29   | 3.48         | 1.49         | 0.69         | 0.32         | 0.11         | 0.03         | 0.00        | 0.00        |
| 21 | 1H    | Q23      | 0.91         | 6         | 15     | 0.91   | 2.32         | 1.26         | 0.51         | 0.18         | 0.05         | 0.01         | 0.03        | 0.00        |
|    |       |          | <b>44.72</b> | <b>80</b> |        | <b>44.72</b>   | <b>68.47</b> | <b>57.26</b> | <b>47.32</b> | <b>36.55</b> | <b>27.02</b> | <b>15.71</b> | <b>8.97</b> | <b>2.33</b> |

**Suggested grade boundaries**

| Grade | 9  | 8  | 7  | 6  | 5  | 4  | 3  |
|-------|----|----|----|----|----|----|----|
| Mark  | 73 | 63 | 52 | 42 | 32 | 21 | 12 |