| B1 | Answers to the Non-Calculator Paper | 30 |
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| 1 | Mark 1 Change the mixed fraction and change the divide to multiply $\frac{25}{8} \times \frac{4}{5} = \frac{100}{40}$<br>Mark 2 Consistent answer in the simplest form $\mathbf{\frac{5}{2}}$ | |
| 2 | Mark 1 Start to expand (evidence of any 3 correct terms) $6x^2 + 20x \ or \ -15x - 50$<br>Mark 2 Fourth term correct and collect like terms $\mathbf{6x^2 + 5x - 50}$ | |
| 3 | Mark 1 Median $median = 0.5$ °C<br>Mark 2 Find the quartiles $Q_1 = -3, \ Q_3 = 2$<br>Mark 3 Identify the SIQR for Switzerland $SIQR = \frac{2--3}{2} = \mathbf{2.5}$<br>Mark 4 Compare median "On average the midday temperatures were lower in Colorado"<br>Mark 5 Compare SIQR "Temperatures in Colorado were more consistent (1.25 < 2.5)" | |
| 4 | Mark 1 Using $x = -1$, evaluate $f(x)$ $f(x) = 5 - 3(-1) = 8$<br>Mark 2 Know to substitute into the function $11 = 5 - 3b$<br>Mark 3 Find a value for $b$ $6 = -3b, \ \mathbf{b = -2}$ | |
| 5 | Mark 1 start to factorise (one factor correct) $(2x + 3) \ or \ (x - 4)$<br>Mark 2 complete factorisation $\mathbf{(2x + 3)(x - 4)}$ | |
| 6 | Mark 1 Show scaling for the simultaneous equations<br>$6x + 10y = 10$ or $9x + 15y = 15$<br>$6x + 9y = 12$ $10x + 15y = 20$<br>Mark 2 Follow a valid strategy to find values for $y$ and for $x$<br>$y = -2$ by substitution $3x - 10 = 5, \ x = 5$<br>or $x = 5$, $10 + 3y = 4, \ y = -2$<br>Mark 3 Both values correct for this simultaneous equation $\mathbf{x = 5, \ y = -2}$ | |
| 7 | Mark 1 Correct bracket with square $(x - 2)^2 \ldots$<br>Mark 2 Complete process $\mathbf{(x - 2)^2 - 7}$ | |
| 8 | Mark 1 Factorise numerator $x^2 - 25 = (x + 5)(x - 5)$<br>Mark 2 Express denominator in factorised form $(x - 5)^2 = (x - 5)(x - 5)$<br>Mark 3 Simplify fraction $\frac{(x+5)(x-5)}{(x-5)(x-5)} = \mathbf{\frac{x+5}{x-5}}$ | |

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| 9 | Mark 1 Know to change $\sqrt{m}$ to index form<br>Mark 2 Use the laws of indices | $\sqrt{m} = m^{\frac{1}{2}}$<br>$\boldsymbol{m^5 \times m^{\frac{1}{2}} = m^{\frac{11}{2}}}$ | |
| 10 | Mark 1 Substitute into the cosine rule<br><br>Mark 2 Start to evaluate<br>Mark 3 Find PR<br>Mark 4 Simplify the surd | $PR^2 = 5^5 + 7^2 - 2 \times 5 \times 7 \times \frac{1}{5}$<br><br>$PR^2 = 25 + 49 - 14$<br>$PR = \sqrt{60}$<br>$\sqrt{60} = \sqrt{4}\sqrt{15} = 2\sqrt{15}$ | |
| 11 | Mark 1 Coordinates of Q<br>Mark 2 Coordinates of R<br>Mark 3 Find the $x$-coordinate of the turning point<br>Mark 4 Find the $y$-coordinate of the turning point<br>Mark 5 State the answer in coordinate form | $Q = (2,0)$<br>$R = (8,0)$<br>$x = 5$<br>$y = (5-8)(2-5) = 9$<br>**Turning point** $\boldsymbol{(5,9)}$ | |
| | **30 marks** | | |