**Specimen assessment materials Higher tier Unit 2 Stage 2 mark scheme**

| No | Working | Answer | Mark | Notes |
|---|---|---|---|---|
| 1 | $\frac{2.4+1.9}{20} = \frac{4.3}{20}$ | 0.215 | 2 | M1 correct order of evaluation<br>A1 cao |
| 2 (a) | $ADB = 48^o$<br>$BAD = 180^o - 36^o - 48^o$<br>Or<br>$ACE = 36^o$<br>$BAD = 180^o - 36^o - 48^o$ | 96 | 2 | B1 48<br>B1 cao |
| (b) | $ADB = 48^o$ (Corresponding angles)<br>$BAD = 180^o - 36^o - 48^o$ (Angle sum of a triangle) | Correct reasons | 1 | B1 Both reasons (oe) |
| 3 | $D = 220 - 40$<br>$S = \frac{220-40}{2.5}$ | 72 | 3 | M1 for use of $S = \frac{D}{T}$<br>A1 for $\frac{180}{2.5}$<br>A1 for 72 |

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|---|---|---|---|---|
| 4 (a) | | $7^{13}$ | 1 | B1 cao |
| (b) | $\frac{3^{28}}{3^{26}} = 3^2$<br>$3^2 \times 3^x = 9$ | 0 | 2 | M1 $\frac{3^{28}}{3^{26}} = 3^2$<br>A1 cao |
| 5 | | $5.12 \times 10^{11}$ | 2 | M1 evidenced by 5.12<br>A1 cao |
| 6 (a) | | $2x^2 + 6x$ | 2 | B2 $2x^2 + 6x$ cao<br>(B1 $2x^2$ or B1 $6x$ seen) |
| (b) | | $(y-6)(y+1)$ | 2 | B2<br>(B1 $(y + a)(y + b)$ with $ab = -6$) |
| 7 | $360^o - 45^o - 2 \times 90^o$ | $135^o$ | 2 | M1 recognition of *OSPA* as a quadrilateral with angles *S* and *A* being right angles<br>A1 cao |

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| 8 | $x(x+5)+(x+1)^2$<br>$=x^2+5x\ +\ x^2+2x+1$<br>$2x^2+7x+1=21$<br>$2x^2+7x-20=0$<br><br>**OR**<br>$(2x+1)(x+1)+4x$<br>$=\ 2x^2+3x+1+4x$<br>$2x^2+7x+1=21$<br>$2x^2+7x-20=0$<br><br>**OR**<br>$(2x+1)(x+5)-4(x+1)$<br>$=\ 2x^2+11x+5-4x-4$<br>$2x^2+7x+1=21$<br>$2x^2+7x-20=0$ | | 3 | M1 split into 2 parts with at least one correct expression for one of the parts<br>A1 $x^2+5x$ or $x^2+2x+1$<br>A1 for fully correct working leading to the given answer<br>**OR**<br>M1 split into 2 parts with at least one correct expression for one of the parts<br>A1 $2x^2+3x+1$ or $4x$<br>A1 for fully correct working leading to the given answer<br>**OR**<br>M1 difference of 2 parts with at least one correct expression for one of the parts<br>A1 $2x^2+11x+5$ or $4x+4$<br>A1 for fully correct working leading to the given answer |

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|---|---|---|---|---|
| 9 | Difference = $n^2 - n$<br>$= n(n-1)$<br>Given $n > 2$, this is the product of 2 integers, neither of which is one<br>Hence not prime<br>**Or**<br>If $n$ is even then so is $n^2$<br>Hence, $n^2 - n$ is even, so not prime<br>If $n$ is odd then so is $n^2$<br>Hence, $n^2 - n$ is even, so not prime | | 3 | M1 Difference = $n^2 - n$<br>A1 $n(n-1)$<br>A1 for fully correct reasoning leading to convincing proof of the statement<br><br>M1 consideration of even and odd cases<br>A1 even case<br>A1 odd case |