

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 A1 cao
2 (a)	$ADB = 48^\circ$ $BAD = 180^\circ - 36^\circ - 48^\circ$ Or $ACE = 36^\circ$ $BAD = 180^\circ - 36^\circ - 48^\circ$	96	2	B1 48 B1 cao
(b)	$ADB = 48^\circ$ (Corresponding angles) $BAD = 180^\circ - 36^\circ - 48^\circ$ (Angle sum of a triangle)	Correct reasons	1	B1 Both reasons (oe)
3	$D = 220 - 40$ $S = \frac{220 - 40}{2.5}$	72	3	M1 for use of $S = \frac{D}{T}$ A1 for $\frac{180}{2.5}$ A1 for 72

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

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

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