TAKE 10 ... FACTORISATION (ALSO INCLUDES INDICES & EXPAND & SIMPLIFY)

JustMaths

Q1.

		Working	Answer	Mark	Notes
	(a)		$3(t + 4)$	1	B1 for $3(t + 4)$ or $3 \times (t + 4)$ oe
	(b)(i)		$20x + 25$	3	M1 for $7 \times 2x + 7 \times 1$ or $14x + 7$ or $6 \times x + 6 \times 3$ or $6x + 18$ A1 for $20x + 25$ (accept $5(4x+5)$)
	(ii)		Shown		B1 for $5(4x+5)$ or describes how the coefficient of x and the constant term are both multiples of 5

Q2.

PAPER: 1MA0/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
(a)		n^4	2	M1 for $\frac{n^{10}}{n^6}$ oe or $\frac{n^7}{n^3}$ oe or $n \times n^3$ oe A1 cao
(b)		$3x^2 + 4x$	2	B2 for $3x^2 + 4x$ or $x(3x + 4)$ (B1 for $x^2 - 2x$ or $2x^2 + 6x$ or $3x^2 + nx$ or $px^2 + 4x$)
(c)		$5(y - 3)$	1	B1 cao
(d)		$9ab(2 + 3b)$	2	B2 for $9ab(2 + 3b)$ (B1 for $9a\ (2b + 3b^2)$ or $9b(2a + 3ab)$ or $ab(18 + 27b)$ or $3ab(6 + 9b)$ or $3a(6b + 9b^2)$ or $3b(6a + 9ab)$ or $9ab$(a two term algebraic expression))

Q3.

Question		Working	Answer	Mark	Notes
	(a)		$8e - 5f$	2	B2 for $8e - 5f$ oe (B1 for $8e$ or $-5f$)
	(b)		$2(2t + 5)$	1	B1 cao
	(c)	$3 + 2p - 2$	$1 + 2p$	2	M1 for $2 \times p$ and 2×-1 oe within at most 3 terms seen A1 cao
	(d)	$x(a + b) + y(a + b)$	$(a + b)(x + y)$	2	M1 for $x(a + b)$ or $y(a + b)$ or $a(x + y)$ or $b(x + y)$ seen A1 for $(a + b)(x + y)$ oe 2-bracketed expression

Q4.

PAPER: 5MB2H_01					
Question		Working	Answer	Mark	Notes
	(a)		$6x^5y^8$	2	M1 for any two of $6, x^5, y^8$ A1 cao
	(b)		$6x^2-11x+3$	2	M1 for 3 out of 4 correct terms with correct signs, or all 4 terms correct ignoring signs A1 cao
	(c)		$4x^3y^2(2y^3-3x)$	2	M1 for $4x^3y^2$ (two terms involving x and/or y) or correct partial factorising taking out two from 4 or x or y A1 cao
	(d)		$(2+x)(e-2f)$	2	M1 for partial factorising of at least two terms eg $2(e-2f)$ or $x(e-2f)$ or $e(2+x)$ or $2f(2+x)$ oe A1 cao

Q5.

PAPER: 1MA0 1H				
Question	Working	Answer	Mark	Notes
(a)		$2g-3h$	2	M1 for $2g$ or $-3h$ A1 for $2g-3h$ or $-3h+2g$
(b)		$y(y-2)$	1	B1
(c)		p^5	2	M1 for $\frac{p^{3+4}}{p^2}\left(=\frac{p^7}{p^2}\right)$ or $p^{3-2}\times p^4$ $(=p^1\times p^4)$ or $p^3\times p^{4-2}$ $(=p^3\times p^2)$ A1 cao

Q6.

Question		Working	Answer	Mark	Notes
	(a)		x^2+2x	1	B1 cao
	(b)		$3y+4x+2$	2	M1 for a method to expand a bracket, e.g. $3y+6$ or $4x-4$ A1 cao
	(c)	$2t^2+10t-3t-15$	$2t^2+7t-15$	2	M1 for 4 terms correct ignoring signs or 3 out of no more than 4 terms with signs correct unless ambiguous A1 cao
	(d)		$4a(2a+3)$	2	M1 for $4a(na+c)$ or $2a(4a+6)$ or $a(8a+12)$ [n,c integers, $c\neq0$] A1 cao
	(e)		$(y+1)(y-2)$	2	M1 for $(y\pm1)(y\pm2)$ unless ambiguous A1 cao

Q7.

Question	Working	Answer	Mark	Notes
(a)		$4wy(5w+6y^2)$	2	M1 for a correct factor taken outside the brackets Or $4wy$(a 2 term expression in w and y, with just one error) A1 cao
(b)		$(m + 8)(m - 5)$	2	M1 for $(m \pm 8)(m \pm 5)$ A1 cao

Q8.

PAPER: 1MA0/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
(a)		$y^2 + 7y + 10$	2	M1 for all 4 terms (and no additional terms) correct ignoring signs **or** 3 terms correct A1 for $y^2 + 7y + 10$
(b)		$(e - 3)(e + 4)$	2	M1 for $(e \pm 3)(e \pm 4)$ A1 for $(e - 3)(e + 4)$

Q9.

Question		Working	Answer	Mark	Notes
	(a)		$x(x + 7)$	1	B1 cao
	(b)		$(y - 8)(y - 2)$	2	M1 $(y \pm 8)(y \pm 2)$ **or** $y(y - 2) - 8(y - 2)$ **or** $y(y - 8) - 2(y - 8)$ A1 cao
	(c)(i)	$2t^2 + 5t + 2 = (2t + 1)(t + 2)$	$(2t + 1)(t + 2)$	3	M1 $(2t + 2)(t + 1)$ oe **or** $2t(t + 2) + 1(t + 2)$ **or** $t(2t + 1) + 2(2t + 1)$ A1 $(2t + 1)(t + 2)$
	(ii)	This is always a product of two whole numbers each of which is greater than 1	Correct explanation		B1 ft from (i) for a convincing explanation referring to factors found in (i)

Q10.

Question		Working	Answer	Mark	Notes
	(a)		$(e + 10)$ $(e - 10)$	1	B1 cao
	(b)		$(x - 5)$ $(2x + 3)$	2	M1 for $(2x \pm 3)(x \pm 5)$ A1 cao
	(c)		$(g - 7)^6$	1	B1 cao