



Simplifying Algebraic Expressions

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1	12	$9 - 2x^2$	3	B1 for $x^2 - 3x - 3x + 9$ or $2x^2 - 6x - 6x + 18$ B1 for $4x^2 - 6x - 6x + 9$ or $-4x^2 + 6x + 6x - 9$
2	3	2	2	M1 $3x - 1 - 3x + 3$
3	1	$2y(x - 2z)$	2	B1 for $y(2x - 4z)$ or $2(xy - 2yz)$
4	2	$(a + b)(x + y)$	2	M1 $x(a + b) + y(a + b)$ or M1 $a(x + y) + b(x + y)$
5	11	$x(p - 2q)(p + 2q)$	3	M2 for $(px - 2qx)(p + 2q)$ or $(p - 2q)(px + 2qx)$ or M1 for $x(p^2 - 4q^2)$
6	3	$3p(5p + 8t)$ final answer	2	B1 for answer of $3(5p^2 + 8pt)$ or $p(15p + 24t)$ or SC1 for correct answer seen in working
7	13 (a)	71	2	M1 for $7 \times 8 - 3 \times -5$ or B1 56 and -15
	(b)	$3v(u + 3w)$ final answer	2	B1 for $3(uv + 3vw)$ or $v(3u + 9w)$ As final answer
8	5	$a^{(1)} - b^{(1)}$ www cao	2	M1 for $a^{\frac{1}{2}}a^{\frac{1}{2}} - a^{\frac{1}{2}}b^{\frac{1}{2}} + a^{\frac{1}{2}}b^{\frac{1}{2}} - b^{\frac{1}{2}}b^{\frac{1}{2}}$ oe
9	4	$3y - y^4$ final answer	2	B1 for $3y$ or $-y^4$ as part of two term expression
10	6	$3x(4y - x)$ final answer	2	B1 for $3(4xy - x^2)$ or $x(12y - 3x)$
11	10	$(a + b)(p - 2)$	2	B1 $p(a + b) - 2(a + b)$ or $a(p - 2) + b(p - 2)$
12	2	$(p + 3)(k + m)$	2	B1 for $k(p + 3) + m(p + 3)$ or $p(k + m) + 3(k + m)$
13	17 (a)	$(a + b)(1 + t)$	2	B1 for $1(a + b) + t(a + b)$ or $a(1 + t) + b(1 + t)$
	(b)	$(x - 6)(x + 4)$	2	SC1 for answer of $(x + a)(x + b)$ where $ab = -24$ or $a + b = -2$
14	9 (a)	$a^2 + 2ab + b^2$	2	B1 for a^2 [+] ab [+] ab [+] b^2 or better seen
	(b)	22	1	
15	10 (a)	$(a + b)(x + y)$	2	B1 for $a(x + y) + b(x + y)$ or $x(a + b) + y(a + b)$
	(b)	$(x - 1)(3x - 2)$	2	B1 for $(x - 1)(3(x - 1) + 1)$ If B0 then SC1 for $(x + a)(3x + b)$ where $3a + b = -5$ or $ab = 2$ or $3(x - 1)(x - \frac{2}{3})$

16	16	(a)	$2pq(2p-3q)$	2	B1 for $pq(4p-6q)$ or $2q(2p^2-3pq)$ or $2p(2pq-3q^2)$
		(b)	$(u+4t)(1+x)$	2	B1 for $1(u+4t)+x(u+4t)$ or $u(1+x)+4t(1+x)$
17	4		$5a(3a^2-b)$	2	B1 for $a(15a^2-5b)$ or $5(3a^3-ab)$
18	4		$2x^2+8x-35$ final answer	2	B1 for 2 correct terms in final answer or M1 for $2x^2+3x$ or $5x-35$
19	20	(a)	$(p+t)(y+2x)$ final answer	2	B1 for $y(p+t)+2x(p+t)$ or $p(y+2x)+t(y+2x)$
		(b)	$7(h+k)(h+k-3)$ final answer	2	B1 for $7((h+k)^2-3(h+k))$ or $(h+k)(7(h+k)-21)$
20	2		$3x(3x-2)$ final answer	2	B1 for $3(3x^2-2x)$ or $x(9x-6)$
21	5		$(2x+1)(x-3)$	2	B1 for $(2x+a)(x+b)$, where $ab=-3$ or $a+2b=-5$
22	9	(a)	$(a+3c)(x+y)$ final answer	2	B1 for $a(x+y)+3c(x+y)$ or $x(a+3c)+y(a+3c)$
		(b)	$3(a-2b)(a+2b)$ final answer	3	B2 for $3(a-2b)(a+2b)$ seen and then spoiled or $(3a-6b)(a+2b)$ or $(a-2b)(3a+6b)$ or $(a-2b)(a+2b)$ or B1 for $3(a^2-4b^2)$
23	15	(a)	$(3w+10)(3w-10)$ final answer	1	
		(b)	$(m+n)(p-6q)$ oe final answer	2	B1 for $p(m+n)-6q(m+n)$ oe or $m(p-6q)+n(p-6q)$ oe
24	6		$5-u$ final answer	2	B1 for $5+ku$ or $j-u$, $k \neq 0$ as final answer
25	7		$2x(1-2x)$ final answer	2	B1 for $2(x-2x^2)$ or $x(2-4x)$ as final answer

26	24 (a)	$(a+2)(2+p)$ final answer	2	B1 for $2(a+2)+p(a+2)$ or $a(2+p)+2(2+p)$
	(b)	$2(9+2t)(9-2t)$ oe	2	B1 for $2(81-4t^2)$ oe or $(18+4t)(9-2t)$ oe If 0 scored SC1 for $(9+2t)(9-2t)$ final answer
27	15	$a = 3.5$ or $\frac{7}{2}$ and $b = -17.25$ or $-\frac{69}{4}$	3	B2 for one correct or M2 for $(x + \frac{7}{2})^2 - 5 - (\frac{7}{2})^2$ or M1 for $(x + \frac{7}{2})^2$ oe or $2a = 7$ or $a^2 + b = -5$ after $x^2 + 2ax + a^2$
28	13 (a)	$(2p-3)(2p+3)$ final answer	1	
	(b)	$(a-2b)(2x-y)$ oe final answer	2	B1 for $2x(a-2b)-y(a-2b)$ or $a(2x-y)-2b(2x-y)$
29	5	$9y^3$ final answer	2	B1 for $9y^k$, $9 \times y^3$ or ky^3 ($k \neq 0$) as final answer
30	13 (a)	$m(m^2+1)$ final answer	1	
	(b)	$(5-y)(5+y)$ final answer	1	
	(c)	$(x-4)(x+7)$ final answer	2	B1 for $(x-4)(x+7)$ seen then spoiled or M1 for $(x+a)(x+b)$ where $ab = -28$ or $a+b = 3$ or for $x(x+7)-4(x+7)$ or $x(x-4)+7(x-4)$
31	5	$9y^3$ final answer	2	B1 for $9y^k$, $9 \times y^3$ or ky^3 ($k \neq 0$) as final answer
32	13 (a)	$m(m^2+1)$ final answer	1	
	(b)	$(5-y)(5+y)$ final answer	1	
	(c)	$(x-4)(x+7)$ final answer	2	B1 for $(x-4)(x+7)$ seen then spoiled or M1 for $(x+a)(x+b)$ where $ab = -28$ or $a+b = 3$ or for $x(x+7)-4(x+7)$ or $x(x-4)+7(x-4)$