

Level 3 Algebra · Factorising - Answers

June 2013 - Question 2

2	(a)		$(x + 3)(x + 5)$	1	B1 for $(x + 3)(x + 5)$
	(b)		$(2y + 3)(2y - 3)$	1	B1 for $(2y + 3)(2y - 3)$
	(c)	$p(t + 2) + 7(t + 2)$	$(p + 7)(t + 2)$	2	M1 for $p(t + 2)$ and $7(t + 2)$ or $t(p + 7)$ and $2(p + 7)$ A1 for $(p + 7)(t + 2)$

Jan 2014 - Question 3

3	(a)		$4a^2 - 4a - 3$	2	M1 for 3 terms correct out of 4 terms A1 cao
	(b)		$3cd(3cd - 8)$	2	B2 for $3cd(3cd - 8)$ (B1 for a correct but not fully factorised expression)
	(c)	$25(4g^2 - h^2)$	$25(2g - h)(2g + h)$	2	B2 cao (B1 for 2 correct linear factors)

Jan 2015 - Question 2

2	(a)		$(x - 5)^2$	1	B1 for $(x - 5)^2$
	(b)		$9(1 - y)(1 + y)$	2	M1 for a correct but not full factorisation including two linear factors A1 for $9(1 - y)(1 + y)$
	(c)		$(v + 3)(t - 2)$	2	M1 for $t(v + 3)$ and $-2(v + 3)$ or $v(t - 2)$ and $3(t - 2)$ A1 for $(v + 3)(t - 2)$

June 2015 - Question 1

1	(a)		$12xy(2xy + 1)$	2	B2 cao (B1 for any correct partial factorisation beginning with at least two of the factors a ($a \neq 1$), x , y .)
	(b)		$(e + 3)(f - 4)$	2	M1 for $e(f - 4)$ and $3(f - 4)$ OR $f(e + 3)$ and $-4(e + 3)$ A1 for $(e + 3)(f - 4)$ oe
	(c)		$(x - 4)(x + 4)$	1	B1

Jan 2016 - Question 3

3	(a)		$5cd(3c^2 + 7d + 4cd)$	2	B2 cao (B1 for a partial correct factorisation which shows a product of at least 3 factors)
	(b)		$(b - 2)(a - 4)$	2	M1 for $b(a - 4)$ and $-2(a - 4)$ or $a(b - 2)$ and $-4(b - 2)$ oe A1 for $(b - 2)(a - 4)$ oe
	(c)		$3(b - 7)(b + 4)$	2	M1 for correct partial factorisation with 2 linear factors A1 cao

June 2016 - Question 4

4	(a)	$2x^2 + 6x - 4x - 12$	$2x^2 + 2x - 12$	2	M1 for expanding bracket to obtain 4 terms with all 4 correct without considering signs or for 3 terms out of 4 correct with correct signs A1 cao
	(b)		$5de^2(2d + 3e)$	2	B2 cao (B1 for any correct partial factorisation with at least two of the factors $5, d, e$.)
	(c)		$3(p - 2q)(p + 2q)$	2	M1 for a correct partial factorisation with 2 linear factors A1 cao

Jan 2017 - Question 1

1	(a)		$(d - 4)(d + 3)$	1	B1 for $(d - 4)(d + 3)$ oe
	(b)		$(m + 2)(k - 3)$	2	M1 for $m(k - 3)$ and $2(k - 3)$ or $k(m + 2)$ and $-3(m + 2)$ oe A1 for $(m + 2)(k - 3)$ oe
	(c)		$2p^2(p - 3)(p + 3)$	2	M1 for correct partial factorisation with at least 2 factors in p A1

June 2017 - Question 1

1	(a)		$7xy(5xy + 2)$	2	M1 for a correct but not full factorisation including three factors A1 for $7xy(5xy + 2)$
	(b)		$(d + 3)(e - 3)$	2	M1 for $d(e - 3)$ and $3(e - 3)$ or $e(d + 3)$ and $-3(d + 3)$ A1 for $(d + 3)(e - 3)$
	(c)		$(2x - 5)(2x + 5)$	1	B1 for $(2x - 5)(2x + 5)$

Jan 2018 - Question 1

1	(a)	$5c(4d^2 - 3cd)$ or $cd(20d - 15c)$ or $5d(4cd - 3c^2)$	$5cd(4d - 3c)$	2	B2 (B1 for a partial correct factorisation which shows a product of 3 factors)
	(b)		$(5k - 1)(k + 4)$	2	M1 for $(5k \pm 1)(k \pm 4)$ A1

June 2018 - Question 8

8	(a)		$9xd(7x + d)$	2	B2 cao (B1 for a partial correct factorisation which shows a product of at least 3 factors)
	(b)		$2(a - 2)(2b + 1)$	3	M1 for start to method of factorisation eg $4b(a - 2)$ and $2(a - 2)$ M1 for factorisation as product of 1 factor in terms of a and 1 factor in terms of b eg $(4b + 2)(a - 2)$ A1 for $2(a - 2)(2b + 1)$
	(c)		$(x - 3t)(x + 3t)$	1	B1

Jan 2019 - Question 1

1	(a)		$(a + c)(b - d)$	2	M1 for $b(a + c)$ and $-d(a + c)$ or $a(b - d)$ and $c(b - d)$ oe A1 for $(a + c)(b - d)$ oe
	(b)		$3r^2t(4 - 3t^2)$	2	B2 (B1 for a correct partial factorisation which is a product of 3 or 4 factors)

June 2019 - Question 1

1	(a)		$8wy^2(3wy - 1)$	2	B2 cao (B1 for a partial correct factorisation which shows a product of at least 3 factors, eg $8wy(3wy^2 - y)$, $4y(6w^2y^2 - 2wy)$)
	(b)		$(3e + 2)(f - 1)$	2	M1 for $3e(f - 1)$ and $2(f - 1)$ or $f(3e + 2)$ and $-1(3e + 2)$ A1 $(3e + 2)(f - 1)$ oe
	(c)		$(5 - 2x)(5 + 2x)$	1	B1 for $(5 - 2x)(5 + 2x)$ oe, eg $-(2x - 5)(2x + 5)$

Jan 2020 - Question 1

1	(a)		$x^2 + xy - 2y^2$	2	M1 for expanding bracket to obtain 4 terms with all 4 correct without considering signs or for 3 terms out of 4 correct with correct signs A1 for $x^2 + xy - 2y^2$
	(b)		$6ut^2(2u + 3t)$	2	B2 for correct factorisation (B1 for a partial correct factorisation which shows a product of 3 or 4 factors)

Jan 2021 - Question 4

4	(a)		$(y - x)(y + x)$	1	B1 oe
	(b)		$(3x - 4)(2y + 3)$	2	M1 for a start to the method of factorisation eg $2y(3x - 4)$ and $3(3x - 4)$ or $3x(2y + 3)$ and $-4(2y + 3)$ A1 $(3x - 4)(2y + 3)$

Jan 2022 - Question 3

3	(a)		$(2w - 5)(t + 3)$	2	M1 for $2w(t + 3)$ and $-5(t + 3)$ or $t(2w - 5)$ and $3(2w - 5)$ oe A1 for $(2w - 5)(t + 3)$ oe
	(b)		$2gh^2(4h - 3g^2)$	2	B2 for correct factorisation (B1 for a partial correct factorisation which shows a product of 3 or 4 factors)

June 2022 - Question 9

9	(a)		$3x^2y(2y - 3x)$	2	M1 for a correct partial factorisation with a product of at least 3 terms, eg $3x(2xy^2 - 3x^2y)$ A1 for full and correct factorisation
	(b)		$p^2(p - q)(p + q)$	2	M1 for $p^2(p^2 - q^2)$ or $(p^2 - pq)(p^2 + pq)$ or $p(p - q)(p^2 + pq)$ or $p(p^2 - pq)(p + q)$ A1 oe

Jan 2023 - Question 2

2	(a)		$3a(a-2c)$	1	B1 oe
	(b)		$(3y+5)(4x-3)$	2	M1 for $3y(4x-3)$ and $5(4x-3)$ or $4x(3y+5)$ and $-3(3y+5)$ A1 $(3y+5)(4x-3)$
	(c)		$(5e-6h)(5e+6h)$	1	B1 $(5e-6h)(5e+6h)$
	(d)		$\frac{3}{2}$	2	M1 for factorising $2w+4=2(w+2)$ or $3w-6=3(w-2)$ or $3(w^2-4)$ and $2(w^2-4)$ A1 oe

June 2023 - Question 1

1	(a)		$7cd(3c-5d)$	2	B2 for correct factorisation (B1 for a correct partial factorisation as a product of 3 factors, eg $7d(3c^2-5cd)$)
	(b)		$2(2k-1)(k+3)$	2	B2 for correct factorisation (B1 for correct partial factorisation as a product of 2 linear factors, eg $(4k-2)(k+3)$)
	(c)		$2w^2-2w+85$	2	M1 for correct expansion of at least one of $(w+6)^2$ or $(w-7)^2$, eg $w^2+12w+36$ or $w^2-14w+49$ or for 2 out of 3 terms correct A1 cao

Jan 2024 – Question 9

9	(a)		$5xy^2(2y+3x)$	2	M1 for a correct partial factorisation with a product of at least 3 factors, eg $5x(2y^3+3xy^2)$ A1 oe
	(b)		$q^2(p-1)(p+1)$	2	M1 for partial factorisation with at least 3 factors, eg $q^2(p^2-1)$ or $q(qp-q)(p+1)$ or $q(p-1)(qp+q)$ or for $(pq-q)(pq+q)$ A1 oe