

Algebraic Identities

$$(a+b)^2 = a^2 + 2ab + b^2 = (-a-b)^2$$
$$(a-b)^2 = a^2 - 2ab + b^2$$
$$(a-b)(a+b) = a^2 - b^2$$

Expand and simplify.

(a) $7(x - 8)$ [1]

(b) $a(a^3 + 3)$ [1]

(c) $y(3 - y^3)$ [2]

(d) $6(2y - 3) - 5(y + 1)$ [2]

(e) $4(2x + 5) - 5(3x - 7)$ [2]

(f) $\frac{1}{2}(6x - 2) - 3(x - 1)$ [2]

(g) $(x + 3)(x + 5)$ [2]

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(h) $(5 - n)(3 + n)$ [2]



(i) $(x - 2)(2x + 5)(x + 3)$ [3]

(j) $(x + 1)(x - 2)(x + 3)$ [3]

(k) $(x+1)(x+2) + 2x(x - 3)$ [3]

(l) $(x - 7)^2$ [2]

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(m) $(x-3)^2(2x+5)$ [3]



(n) $(x+4)^2+5(3x+2)$ [3]

(o) $(2x-3)^2-3x(x-4)$ [4]

(p) $16-4(3x-2)^2$ [3]

(q) $2(x-3)^2-(2x-3)^2$ [3]

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ANSWERS:

(a) $7x - 56$ (b) $a^4 + 3a$ (c) $3y - y^4$ (d) $7y - 23$ (e) $-7x + 55$
(f) 2 (g) $x^2 + 8x + 15$ (h) $-n^2 + 2n + 15$ (i) $2x^3 + 7x^2 - 7x - 30$
(j) $x^3 + 2x^2 - 5x - 6$ (k) $3x^2 - 3x + 2$ (l) $x^2 - 14x + 49$ (m) $2x^3 - 7x^2 - 12x + 45$
(n) $x^2 + 23x + 26$ (o) $x^2 + 9$ (p) $-36x^2 + 48x$ (q) $-2x^2 + 9$

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