

Expand the product of more than 2 binomials

Maths

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Expand the product of more than 2 binomials

1. Expand and simplify.

a) $(x + 2)(x + 3)(x + 4)$

b) $(x + 2)(x + 5)(x + 1)$

c) $(x - 2)(x + 3)(x - 4)$

d) $(x + 3)(x - 3)(2x - 5)$

e) $(2x + 3)(x - 1)(3x - 2)$

2. Expand and simplify.

a) $(x + 2)^3$

b) $(2x + 2)^3$

c) $(x - 2)^2(x + 3)$

d) $(2x + 3)^2(x - 1)$

3. Expand and simplify.

a) $(x + 4)(x + 3)(2x - 2) + (x + 1)^3$

b) $(x + 2)^2(3x - 2) - (2x + 2)^3$

4. Given that,

$$(x + 4)(x + a)(x + 2) \equiv x^3 + 11x^2 + 38x + 40$$

Find a.

5. Given that,

$$(x + 2)(x + 3)(x + a) \equiv x^3 + bx^2 - 4x - 12$$

Find a and b.



Answers



Expand the product of more than 2 binomials

1. Expand and simplify.

a) $(x + 2)(x + 3)(x + 4)$
 $x^3 + 9x^2 + 26x + 24$

b) $(x + 2)(x + 5)(x + 1)$
 $x^3 + 8x^2 + 17x + 10$

c) $(x - 2)(x + 3)(x - 4)$
 $x^3 - 3x^2 - 10x + 24$

d) $(x + 3)(x - 3)(2x - 5)$
 $2x^3 - 5x^2 - 18x + 45$

e) $(2x + 3)(x - 1)(3x - 2)$
 $6x^3 + x^2 - 11x - 6$

2. Expand and simplify.

a) $(x + 2)^3$
 $x^3 + 6x^2 + 12x + 8$

b) $(2x + 2)^3$
 $8x^3 + 24x^2 + 24x + 8$

c) $(x - 2)^2(x + 3)$
 $x^3 - x^2 - 8x + 12$

d) $(2x + 3)^2(x - 1)$
 $4x^3 + 8x^2 - 3x - 9$

3. Expand and simplify.

a) $(x + 4)(x + 3)(2x - 2) + (x + 1)^3$
 $x^3 + 15x^2 + 13x - 23$

b) $(x + 2)^2(3x - 2) - (2x + 2)^3$
 $-5x^3 - 14x^2 - 20x - 16$

4. Given that,

$$(x + 4)(x + a)(x + 2) \equiv x^3 + 11x^2 + 38x + 40$$

Find a. $a = 5$

5. Given that,

$$(x + 2)(x + 3)(x + a) \equiv x^3 + bx^2 - 4x - 12$$

Find a and b. $a = -2$ and $b = 3$

