

Expanding Double Brackets

Foundation / Higher | Written solutions

FOUR PRODUCTS

Question 1

Multiply each term in the first bracket by each in the second: $1x^2 + (2 + 1)x + (2) = x^2 + 3x + 2$.

Question 2

Multiply each term in the first bracket by each in the second: $2x^2 + (8 + 3)x + (12) = 2x^2 + 11x + 12$.

Question 3

Multiply each term in the first bracket by each in the second: $2x^2 + (1 + 14)x + (7) = 2x^2 + 15x + 7$.

Question 4

Multiply each term in the first bracket by each in the second: $6x^2 + (4 + 3)x + (2) = 6x^2 + 7x + 2$.

Question 5

Multiply each term in the first bracket by each in the second: $1x^2 + (1 + -3)x + (-3) = x^2 - 2x - 3$.

Question 6

Multiply each term in the first bracket by each in the second: $2x^2 + (-10 + -5)x + (25) = 2x^2 - 15x + 25$.

Question 7

Multiply each term in the first bracket by each in the second: $1x^2 + (-4 + 4)x + (-16) = x^2 - 16$.

Question 8

Multiply each term in the first bracket by each in the second: $10x^2 + (-5 + -6)x + (3) = 10x^2 - 11x + 3$.

SQUARED BRACKETS**Question 9**

Multiply each term in the first bracket by each in the second: $1x^2 + (-1 + -1)x + (1) = x^2 - 2x + 1$.

Question 10

Multiply each term in the first bracket by each in the second: $4x^2 + (2 + 2)x + (1) = 4x^2 + 4x + 1$.

Question 11

Multiply each term in the first bracket by each in the second: $20x^2 + (-24 + -5)x + (6) = 20x^2 - 29x + 6$.

Question 12

Multiply each term in the first bracket by each in the second: $4x^2 + (2 + -2)x + (-1) = 4x^2 - 1$.

Question 13

Multiply each term in the first bracket by each in the second: $16x^2 + (4 + 4)x + (1) = 16x^2 + 8x + 1$.

COMBINED EXPRESSIONS**Question 14**

The two products are $x^2 - x - 2$ and $x^2 + 4x - 21$. Add them: $(x^2 - x - 2) + (x^2 + 4x - 21) = 2x^2 + 3x - 23$.

Question 15

The products are $2x^2 + x - 3$ and $4x^2 - 13x + 3$. Subtract the whole second expression: $(2x^2 + x - 3) - (4x^2 - 13x + 3) = -2x^2 + 14x - 6$.

Question 16

Triangle area = $\frac{1}{2} \times \text{base} \times \text{perpendicular height} = \frac{1}{2}(x + 3)(9x + 2)$. Expand: $(x + 3)(9x + 2) = 9x^2 + 29x + 6$. So area = $(\frac{9}{2})x^2 + (\frac{29}{2})x + 3 \text{ cm}^2$; $a = \frac{9}{2}$, $b = \frac{29}{2}$, $c = 3$.