Expanding triple brackets

1

Expand and simplify

$(x + 1)(x + 3)(x + 4)$

the first two brackets

×	x	+3
x	x^2	$+3x$
+1		

=

then multiply by the third

×			

Answer _____

2

Expand and simplify

$(x + 3)(x + 1)(x + 5)$

the first two brackets

×	x	+1
x	x^2	
+3		

=

then multiply by the third

×			

Answer _____

3

Expand and simplify

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

the first two brackets

×	x	−2
x		
+5		

=

then multiply by the third

×			

Answer _____

4

Expand and simplify

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

×		

=

×			

Answer _____

5

Expand and simplify

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

×		

=

×			

Answer _____

6

Expand and simplify

$(x - 2)^3$

Answer _____

7

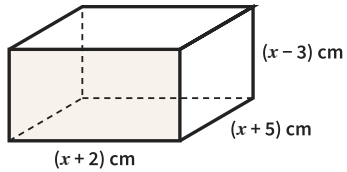
Ola writes $(x + 4)^3 = x^3 + 64$. Put $x = 1$ into both sides to show she is wrong.

Then expand $(x + 4)^3$ correctly.

Answer _____

8

A cuboid measures $(x + 2)$ cm by $(x + 5)$ cm by $(x - 3)$ cm. Show that its volume is $x^3 + ax^2 + bx + c$ cm^3, and find a, b and c.



Answer _____

Expanding triple brackets *further practice*

9

Expand and simplify

$(x + 5)(x - 1)(x - 3)$

Answer _____

10

Expand and simplify $(x - 4)^2(x + 1)$

Answer _____

11

Sam expands $(x + 2)(x - 3)(x + 1)$ and gets $x^3 - 7x + 6$. Put $x = 2$ into both to check. Is Sam right? If not, find the right answer.

Answer _____

12

Given that $(x + 1)(x + 6)(x + k) = x^3 + 11x^2 + 34x + 24$, find the value of k.

Answer _____

13

A cuboid has a square base with sides of $(x + 2)$ cm. Its height is $(x - 3)$ cm. Find an expression for its volume. Expand and simplify.

Answer _____

14

Show that

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

Answer _____

15

Expand and simplify

$(x + 2)(x + 4)(x + 5)$. Then put $x = 10$ into your answer to work out $12 \times 14 \times 15$ without a calculator.

Answer _____

16

Kai expands $(x - 1)(x + 2)(x + 5)$ and writes $x^3 + 6x^2 + 5x - 10$. Explain his mistake. Then write the right answer.

Answer _____