

GCSE & High School Topic Questions

Expanding Brackets

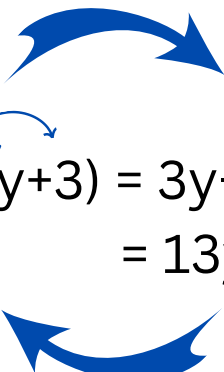
Expanding brackets means multiplying each term in the brackets by the expression outside the brackets.

It is the reverse process of **factorization**.

Example 1

Expand and simplify: $3(y-4) + 5(2y+3)$

Expanding brackets


$$\begin{aligned} 3(y-4) + 5(2y+3) &= 3y-12+10y+15 \\ &= 13y+3 \end{aligned}$$

Factorization

Example 2

Expand and simplify: $4(x+2) = 28$


$$\begin{aligned} 4(x+2) &= 28 \\ 4x+8 &= 28 \\ 4x &= 20 \\ x &= 5 \end{aligned}$$

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(1) Expand $8(2x+8)$

(2 marks)

(2) Expand and simplify $5(g+5)+2(g-4)$

(2 marks)

(3) Expand and simplify $7(t-4)+6(t-2)$

(2 marks)

(4) Expand and simplify $6(y+4)-5(y-2)$

(2 marks)

(5) Solve $3(x+9)=21$

(2 marks)

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Expanding Brackets

(6) Expand and simplify $4(y-1)+3(2y+5)$

(2 marks)

(7) Expand and simplify $8(a+2)-3(a-3)$

(2 marks)

(8) Expand and simplify $9(2+3y)+3(3-y)$

(2 marks)

(9) Expand and simplify $5(3a+7)+2(3a-4)$

(2 marks)

(10) Expand and simplify $7(5+2n)+2(5-3n)$

(2 marks)

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answers

(1) Expand $8(2x+8)$

Solution:

$$8(2x+8) = 16x + 64$$

(2) Expand and simplify $5(g+5)+2(g-4)$

Solution:

$$\begin{aligned} 5(g+5)+2(g-4) &= 5g+25+2g-8 \\ &= 7g+17 \end{aligned}$$

(3) Expand and simplify $7(t-4)+6(t-2)$

Solution:

$$\begin{aligned} 7(t-4)+6(t-2) &= 7t-28+6t-12 \\ &= 13t-40 \end{aligned}$$

(4) Expand and simplify $6(y+4)-5(y-2)$

Solution:

$$\begin{aligned} 6(y+4)-5(y-2) &= 6y+24-5y+10 \\ &= y+34 \end{aligned}$$

(5) Solve $3(x+9)=21$

Solution:

$$\begin{aligned} 3(x+9) &= 21 \rightarrow 3x+27=21 \\ 3x &= -6 \\ x &= -2 \end{aligned}$$

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answers

(6) Expand and simplify $4(y-1)+3(2y+5)$

Solution:

$$\begin{aligned}4(y-1)+3(2y+5) &= 4y-4+6y+15 \\ &= 10y+11\end{aligned}$$

(7) Expand and simplify $8(a+2)-3(a-3)$

Solution:

$$\begin{aligned}8(a+2)-3(a-3) &= 8a+16-3a+9 \\ &= 5a+25\end{aligned}$$

(8) Expand and simplify $9(2+3y)+3(3-y)$

Solution:

$$\begin{aligned}9(2+3y)+3(3-y) &= 18+27y+9-3y \\ &= 24y+27\end{aligned}$$

(9) Expand and simplify $5(3a+7)+2(3a-4)$

Solution:

$$\begin{aligned}5(3a+7)+2(3a-4) &= 15a+35+6a-8 \\ &= 21a+27\end{aligned}$$

(10) Expand and simplify $7(5+2n)+2(5-3n)$

Solution:

$$\begin{aligned}7(5+2n)+2(5-3n) &= 35+14n+10-6n \\ &= 8n+45\end{aligned}$$
