Expanding and Factorising

Year 10–11 Maths · Years 10–11 · NCEA Level 1 · About 25 minutes · 8 questions

Name _____ Date _____ Score / 8

WHAT YOU WILL PRACTISE

- Expand single and double brackets and simplify
- Factorise by taking out a common factor
- Factorise quadratics, including the difference of two squares

WORKED EXAMPLE

Factorise $x^2 + 2x - 15$.

1. Find two numbers that multiply to -15 and add to 2.
2. The numbers are 5 and -3, because $5 \times -3 = -15$ and $5 + -3 = 2$.
3. Write the brackets: $(x + 5)(x - 3)$.
4. Check by expanding: $x^2 - 3x + 5x - 15 = x^2 + 2x - 15$.

Answer: $(x + 5)(x - 3)$

Questions

Show your working in the space under each question.

1. Expand $4(x + 3)$

2. Expand and simplify $3(2x - 1) + 2(x + 5)$

3. Expand and simplify $(x + 3)(x + 5)$

4. Expand and simplify $(x - 4)(x + 6)$

5. Expand and simplify $(2x + 1)(x - 3)$

6. Factorise $6x + 15$

7. Factorise $x^2 + 7x + 12$

8. Factorise $x^2 - 49$

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Answers: Expanding and Factorising

Mark your own work, then go back to any question you got wrong before reading the tutor tip.

Q	QUESTION	ANSWER
1	Expand $4(x + 3)$	**$4x + 12$**
2	Expand and simplify $3(2x − 1) + 2(x + 5)$	**$8x + 7$**
3	Expand and simplify $(x + 3)(x + 5)$	**$x^2 + 8x + 15$**
4	Expand and simplify $(x − 4)(x + 6)$	**$x^2 + 2x − 24$**
5	Expand and simplify $(2x + 1)(x − 3)$	**$2x^2 − 5x − 3$**
6	Factorise $6x + 15$	**$3(2x + 5)$**
7	Factorise $x^2 + 7x + 12$	**$(x + 3)(x + 4)$**
8	Factorise $x^2 − 49$	**$(x + 7)(x − 7)$**

TUTOR TIP

Always expand your factorised answer as a check. It takes ten seconds and catches almost every sign error.

Stuck on a question? Work through it live with a tutor.

YFCampus offers one-to-one online Maths tutoring matched to your school curriculum. Book a free trial class at **www.yfcampus.com/nz**

Written for students aged 13 to 16 and suitable for Years 10–11. Check your school’s curriculum for the exact order of topics. YFCampus is independent and is not affiliated with any exam board or education ministry.