Expand, factorise and simplify expressions and solve equations algebraically, applying...

expand, factorise and simplify expressions and solve equations algebraically, applying exponent laws involving products, quotients and powers of variables, and the distributive property

Learning intention

- expand, factorise and simplify expressions and solve equations algebraically, applying exponent laws involving products, quotients and powers of variables, and the distributive...

Teach and model

- explaining the relationship between factorisation and expansion, including the completed square form for quadratic expressions
- applying knowledge of exponent laws to algebraic terms and using both positive and negative integral exponents to simplifying algebraic expressions and solve equations...

Check understanding

- Explain the main idea in expand, factorise and simplify expressions and solve equations algebraically, applying... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.