

Apply the exponent laws to numerical expressions with integer exponents...

apply the exponent laws to numerical expressions with integer exponents and extend to variables

Learning intention

- apply the exponent laws to numerical expressions with integer exponents and extend to variables

Teach and model

- representing decimals in exponential form; for example, 0.475 can be represented as $0.475 = \frac{475}{1000} = \frac{475}{10^3}$ and 0.00023 as 23×10^{-5}
- simplifying and evaluating numerical expressions, involving both positive and negative integer exponents, explaining why; for example...
- relating the computation of numerical expressions involving exponents to the exponent laws and the definition of an exponent; for example...

Check understanding

- Explain the main idea in apply the exponent laws to numerical expressions with integer exponents... 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.