

Multiplication and order

Pearson Edexcel GCSE Mathematics 1MA1 • L002

Foundation and Higher • Lesson resources

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Purpose

Calculate with signed products, quotients and mixed operations; justify the order and check with an inverse.

Vocabulary

Product: result of multiplication. Quotient: result of division. Factor: a number being multiplied. Brackets group a calculation. A square multiplies a number by itself.

Why the method works

Three lots of -4 give -12 . To keep distribution valid, $(-3) \times (4 + (-4))$ must be zero. Since $(-3) \times 4 = -12$, $(-3) \times (-4)$ must be $+12$. Division reverses multiplication: $-24 \div 6 = -4$ because $6 \times (-4) = -24$. Division by zero is undefined.

Method and checking

Brackets first; then powers; then multiplication and division from left to right; then addition and subtraction from left to right. Equal-priority operations are not separate alphabetical steps.

Common errors and next attempt

Negative product error: rebuild three groups of -4 , then use distribution over a zero pair. Quotient error: write divisor $\times$ missing number = dividend. Order error: underline the next operation, write one transformation per line. Reassess with $-4 \times (-3) = 12$, $-35 \div 7 = -5$ and $12 - 2 \times 4 = 4$.