Quadratic factorisation and solutions

Learn and practise | Free preview

A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Expand and factor monic quadratics and solve related equations.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

Use $(x+a)(x+b)=x^2+(a+b)x+ab$ to connect coefficients and factors. Special patterns include perfect squares and difference of squares.

Rearrange a quadratic equation to zero before using the null factor law. Check both roots and reject any that violate the context.

Worked example

Solve $x^2+2x-15=0$.

Find numbers 5 and -3: sum 2, product -15.

$(x+5)(x-3)=0$.

Answer: $x=-5$ or 3

Try it yourself

Name: _____ Date: _____

1. Expand $(x-7)(x+2)$.

2. Factorise $x^2+11x+30$.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. x^2-5x-14

Multiply all four products.

2. (x+5)(x+6)

5+6=11; 5×6=30.

Curriculum reference: VC2M10A04; VC2M10A13

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