Non monic quadratics and applications

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

- Solve non-monic quadratic equations and interpret roots.
- Explain a method and check the reasonableness of a result.

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

Non-monic quadratics have leading coefficient different from 1. Factorisation, completing the square or the quadratic formula can be used.

For $ax^2+bx+c=0$, $a\neq0$, the discriminant b^2-4ac determines the number of real roots. Context may exclude negative lengths or other algebraically valid values.

Worked example

Solve $2x^2+5x-3=0$.

Factor $(2x-1)(x+3)=0$.

Set each factor to zero.

Answer: $x=1/2$ or -3

Try it yourself

Name: _____ Date: _____

1. Factorise $2x^2+7x+3$.

2. Solve $3x^2-12=0$.

Answers and explanations

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

1. $(2x+1)(x+3)$

Expand to check middle term $7x$.

2. $x=\pm 2$

Divide 3, then take both roots.

Curriculum reference: VC2M10AA07

Independent original resource. Not published or endorsed by VCAA. This focused set supports the listed skills; it is not a complete course or an official assessment.

This free preview may be shared intact with attribution. Not for sale.