Factorise 3

GCSE A Level

Consider the equation $-2s^2 - 5s + 25 = 0$.

Part A Factorise the left hand side

Factorise $-2s^2 - 5s + 25$.

The following symbols may be useful: s

Part B Find the root closest to zero

Using your result from Part A, give the root of the equation $-2s^2 - 5s + 25 = 0$ which is closest to zero.

The following symbols may be useful: s

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Quadratic Equations 1

GCSE P P P A Level P P P

Solve the equation $3p^2 - 6p - 4 = 0$. What is the solution closest to zero? Please answer to 3.s.f.

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Quadratic Equations 5

GCSE C C C A Level P P P

Show that the solution to the equation $mp^2 + bp + k = 0$ can be written as $p = -\gamma \pm \sqrt{\gamma^2 - \omega^2}$.

Part A Find an expression for γ

Hence find an expression for γ in terms of one or more of the constants m, b and k in the original equation.

The following symbols may be useful: `b, gamma, k, m, omega`

Part B Find an expression for ω

Also give an expression for ω in terms of one or more of the constants m, b and k.

The following symbols may be useful: `b, gamma, k, m, omega`

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Factorise 1

GCSE A Level

Consider the equation $3b^2 - 2b - 1 = 0$.

Part A Factorise the left hand side

Give the factorised form of the expression on the left hand side of the equation.

The following symbols may be useful: b

Part B Find the root closest to zero

Give the exact value of the root closest to zero.

The following symbols may be useful: b

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Quadratic Equations 4

GCSE C C C A Level P P P

Find the value of v closest to zero if

$$\frac{3-v}{1-3v} = \frac{2+v}{1+2v}.$$

Please answer to 3.s.f.

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Factorise 5

GCSE A Level

Consider the equation $k + 3 = \dfrac{1 - k}{k + 2}$.

Part A Rearrange to give a quadratic equation

Rearrange the equation to give a quadratic equation in which the right hand side is zero. (As a first step, eliminate the fraction by multiplying through by an appropriate expression.)

The following symbols may be useful: k

Part B Factorise the quadratic equation

Find the factorised form of the expression on the left hand side of the equation derived in Part A.

The following symbols may be useful: k

Part C Find the roots

Find the root of the equation furthest from zero.

Find the root of the equation closest to zero.

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