Rationalising Denominators

Ensure you have: Pencil or pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Revision for this topic

www.corbettmaths.com/more/further-maths/
1. Rationalise the denominator and simplify fully \[ \frac{9}{\sqrt{10} + 3} \]

2. Rationalise the denominator of \[ \frac{33}{4 - \sqrt{5}} \]

Give your answer in the form \( a + b\sqrt{5} \) where \( a \) and \( b \) are integers.
3. Rationalise and simplify \( \frac{\sqrt{5} - 7}{\sqrt{5} + 1} \)

Give your answer in the form \( a + b\sqrt{5} \) where \( a \) and \( b \) are integers.

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4. Rationalise and simplify \( \frac{18 - \sqrt{6}}{3 - \sqrt{6}} \)

Give your answer in the form \( a + b\sqrt{6} \) where \( a \) and \( b \) are integers.

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(4)
5. Simplify fully \( \frac{20 - \sqrt{50}}{3\sqrt{2} - 5} \)

Give your answer in the form \( a + b\sqrt{2} \) where \( a \) and \( b \) are integers.

6. Write \( \frac{6\sqrt{12}}{3 - \sqrt{5}} \) in the form \( \sqrt{x} + \sqrt{y} \) where \( x \) and \( y \) are integers.
7. Rationalise and simplify \[ \frac{17\sqrt{3} + 5\sqrt{5}}{2\sqrt{3} - \sqrt{5}} \]