



New Maths GCSE: N8 - Surds Higher Skills

Name:.....

Date:.....

$\sqrt{20}$ Simplify this surd

A $2\sqrt{10}$ B $2\sqrt{5}$

C $4\sqrt{5}$ D It can't be simplified

Correct Answer: A B C D

Explanation:

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$\sqrt{32}$ Simplify this surd

A $4\sqrt{2}$ B $4\sqrt{8}$

C $16\sqrt{2}$ D It can't be simplified

Correct Answer: A B C D

Explanation:

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$\sqrt{30}$ Simplify this surd

A $10\sqrt{3}$ B $3\sqrt{10}$

C $15\sqrt{2}$ D It can't be simplified

Correct Answer: A B C D

Explanation:

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$\sqrt{8}$ Simplify this surd

A $2\sqrt{2}$ B $4\sqrt{2}$

C $2\sqrt{4}$ D It can't be simplified

Correct Answer: A B C D

Explanation:

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$\sqrt{50}$ Simplify this surd

A $5\sqrt{10}$ B $5\sqrt{2}$

C $10\sqrt{5}$ D It can't be simplified

Correct Answer: A B C D

Explanation:

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$\sqrt{22}$ Simplify this surd

A $11\sqrt{2}$ B $2\sqrt{11}$

C $2\sqrt{5.5}$ D It can't be simplified

Correct Answer: A B C D

Explanation:

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$3\sqrt{2}$ Write this as a single surd

A $\sqrt{6}$ B $\sqrt{18}$

C $\sqrt{12}$ D None of the answers

Correct Answer: A B C D

Explanation:

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$4\sqrt{3}$ Write this as a single surd

A $\sqrt{48}$ B $\sqrt{43}$

C $\sqrt{12}$ D None of the answers

Correct Answer: A B C D

Explanation:

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$2\sqrt{6}$ Write this as a single surd

A $\sqrt{12}$ B $\sqrt{26}$

C $\sqrt{72}$ D None of the answers

Correct Answer: A B C D

Explanation:

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$\frac{3\sqrt{2}}{\sqrt{5}}$ Which would be a good first step to rationalise the denominator?

A $\frac{3\sqrt{2}}{\sqrt{5}} \times \frac{5}{5}$ B $\frac{3\sqrt{2}}{\sqrt{5}} \times \frac{\sqrt{2}}{\sqrt{5}}$

C $\frac{3\sqrt{2}}{\sqrt{5}} \times \sqrt{5}$ D $\frac{3\sqrt{2}}{\sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}}$

Correct Answer: A B C D

Explanation:

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$\frac{\sqrt{7}}{\sqrt{2}}$ Which would be a good first step to rationalise the denominator?

A $\frac{\sqrt{7}}{\sqrt{2}} \times \frac{\sqrt{7}}{\sqrt{2}}$ B $\frac{\sqrt{7}}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$

C $\frac{\sqrt{7}}{\sqrt{2}} \times \sqrt{2}$ D $\frac{\sqrt{7}}{\sqrt{2}} \times \frac{2}{2}$

Correct Answer: A B C D

Explanation:

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$$\frac{5}{\sqrt{6}}$$
 Which would be a good first step to rationalise the denominator?

A $\frac{5}{\sqrt{6}} \times \frac{\sqrt{6}}{\sqrt{6}}$ **B** $\frac{5}{\sqrt{6}} \times \sqrt{6}$

C $\frac{5}{\sqrt{6}} \times \frac{\sqrt{2}}{\sqrt{2}}$ **D** $\frac{5}{\sqrt{6}} \times \frac{5}{\sqrt{6}}$

Correct Answer: A B C D

Explanation:

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$$\frac{5}{1 + \sqrt{2}}$$
 Which would be a good first step to rationalise the denominator?

A $\frac{5}{1 + \sqrt{2}} \times \frac{1 + \sqrt{2}}{1 + \sqrt{2}}$ **B** $\frac{5}{1 + \sqrt{2}} \times \frac{1 - \sqrt{2}}{1 - \sqrt{2}}$

C $\frac{5}{1 + \sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$ **D** $\frac{5}{1 + \sqrt{2}} \times \frac{5}{1 + \sqrt{2}}$

Correct Answer: A B C D

Explanation:

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$$\frac{7}{3 - \sqrt{5}}$$
 Which would be a good first step to rationalise the denominator?

A $\frac{7}{3 - \sqrt{5}} \times \frac{3 - \sqrt{5}}{3 - \sqrt{5}}$ **B** $\frac{7}{3 - \sqrt{5}} \times \frac{\sqrt{5}}{\sqrt{5}}$

C $\frac{7}{3 - \sqrt{5}} \times \frac{\sqrt{5} - 3}{\sqrt{5} - 3}$ **D** $\frac{7}{3 - \sqrt{5}} \times \frac{3 + \sqrt{5}}{3 + \sqrt{5}}$

Correct Answer: A B C D

Explanation:

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$$\frac{\sqrt{2}}{\sqrt{11} - 7}$$
 Which would be a good first step to rationalise the denominator?

A $\frac{\sqrt{2}}{\sqrt{11} - 7} \times \frac{7 - \sqrt{11}}{7 - \sqrt{11}}$ **B** $\frac{\sqrt{2}}{\sqrt{11} - 7} \times \frac{\sqrt{11} + 7}{\sqrt{11} + 7}$

C $\frac{\sqrt{2}}{\sqrt{11} - 7} \times \frac{\sqrt{11} - 7}{\sqrt{11} - 7}$ **D** $\frac{\sqrt{2}}{\sqrt{11} - 7} \times \frac{\sqrt{11}}{\sqrt{11}}$

Correct Answer: A B C D

Explanation:

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