



# New Maths GCSE: N8 - Operations with Surds

Name:.....

Date:.....

Simplify fully

$2\sqrt{2} \times 3\sqrt{8}$

A 96  
B  $\sqrt{96}$   
C 24  
D  $6\sqrt{16}$

57

Correct Answer: A B C D

Explanation:

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$5\sqrt{3} + 7\sqrt{3} =$

A)  $35\sqrt{3}$       B)  $12\sqrt{3}$   
C)  $12\sqrt{6}$       D) 105

Correct Answer: A B C D

Explanation:

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Simplify fully:

$2\sqrt{10} \times 4\sqrt{10}$

a)  $6\sqrt{10}$       c)  $8\sqrt{100}$   
b)  $8\sqrt{10}$       d) 80

Correct Answer: A B C D

Explanation:

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Simplify the following:  $\sqrt{12} + \sqrt{48}$

- A)  $\sqrt{60}$       B)  $6\sqrt{6}$   
C)  $6\sqrt{3}$       D) can't simplify

Correct Answer: A B C D

Explanation:

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Follow up Questions for Edexcel GCSE – June 2014 – Higher – Paper 1 – Question 25b

Work out the value of:

$$(\sqrt{3} + \sqrt{27})^2$$

- A) 48      B) 30  
C)  $\sqrt{30}$       D) 738

Correct Answer: A B C D

Explanation:

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$$\frac{5}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} =$$

Which of the answers below is correct?

- A)  $\frac{5\sqrt{3}}{3}$       B)  $\frac{5\sqrt{3}}{9}$   
C)  $\frac{\sqrt{15}}{\sqrt{9}}$       D)  $\frac{5\sqrt{3}}{\sqrt{3}}$

Correct Answer: A B C D

Explanation:

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$$\sqrt{20} + \sqrt{45} =$$

- a.  $\sqrt{65}$   
b.  $\sqrt{900}$   
c.  $6\sqrt{5}$   
d.  $5\sqrt{5}$

Correct Answer: A B C D

Explanation:

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Simplify  $\sqrt{75} - \sqrt{27}$

A:  $\sqrt{12}$                       B:  $\sqrt{48}$

C:  $4\sqrt{3}$                       D:  $2\sqrt{3}$

Correct Answer: A B C D

Explanation:

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$(2 + \sqrt{3})(2 - \sqrt{3}) =$

(A) 1

(B)  $4 + 4\sqrt{3}$

(C)  $4 - 4\sqrt{3}$

(D) 7

Correct Answer: A B C D

Explanation:

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$(1 + \sqrt{2})(3 - \sqrt{2}) =$

(A) 1

(B)  $2\sqrt{2}$

(C)  $2\sqrt{2} - 1$

(D)  $1 + 2\sqrt{2}$

Correct Answer: A B C D

Explanation:

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$a = 1 + \sqrt{2}$  and  $b = 1 - \sqrt{2}$ .

Which one the following numbers is irrational?

(A)  $a + b$

(B)  $ab$

(C)  $(a + b)^2$

(D)  $a - b$

Correct Answer: A B C D

Explanation:

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$$a = \sqrt{3} + 1, b = \sqrt{3} - 1$$

Which of the following numbers are rational?

- (A)  $a + b$
- (B)  $a^2$
- (C)  $b^2$
- (D)  $(a + b)^2$

Correct Answer: A B C D

Explanation:

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