Simplifying Surds

ANSWERS

1

Write 32 as its largest square factor × another number.

4, 16

32 = 16 × 2

2

Write 108 as its largest square factor × another number.

4, 9, 36

108 = 36 × 3

3

Write 75 as its largest square factor × another number.

25

75 = 25 × 3

4

Write 63 as its largest square factor × another number.

63 = 9 × 7

5

Simplify $\sqrt{12}$

$\sqrt{12} = \sqrt{4} \times \sqrt{3}$

$= 2\sqrt{3}$

Answer $2\sqrt{3}$

6

Simplify $\sqrt{28}$

$\sqrt{28} = \sqrt{4} \times \sqrt{7}$

$= 2\sqrt{7}$

Answer $2\sqrt{7}$

7

Simplify $\sqrt{80}$

$\sqrt{80} = \sqrt{16} \times \sqrt{5}$

$= 4\sqrt{5}$

Answer $4\sqrt{5}$

8

A square has an area of 98 cm².
Find the length of one side as a surd in its simplest form.

98 cm² ?

$\sqrt{98} = \sqrt{49} \times \sqrt{2}$

$= 7\sqrt{2}$

Answer $7\sqrt{2}$ cm

Simplifying Surds *further practice*

ANSWERS

9

Simplify $\sqrt{20}$

Answer $2\sqrt{5}$

10

Simplify $\sqrt{27}$

Answer $3\sqrt{3}$

11

Simplify $\sqrt{300}$

Answer $10\sqrt{3}$

12

Simplify $2\sqrt{18}$

Answer $6\sqrt{2}$

13

Simplify $5\sqrt{8}$

Answer $10\sqrt{2}$

14

Write $3\sqrt{5}$ as the square root of a single number.

Answer $\sqrt{45}$

15

Which is bigger, $2\sqrt{7}$ or $3\sqrt{3}$?
Show how you know.

Answer $2\sqrt{7} = \sqrt{28}$, $3\sqrt{3} = \sqrt{27}$: $2\sqrt{7}$

16

Sam says $\sqrt{32} = 2\sqrt{8}$.
Is Sam's answer in its simplest form?
Explain how you know.

Answer No: $8 = 4 \times 2$, so $2\sqrt{8} = 4\sqrt{2}$