SURDS

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. $\sqrt{12}$

> $2\sqrt{3}$

2. $\sqrt{18}$

> $3\sqrt{2}$

3. $\sqrt{50}$

> $5\sqrt{2}$

4. $\sqrt{72}$

> $6\sqrt{2}$

5. $\sqrt{27}$

> $3\sqrt{3}$

6. $\sqrt{8}$

> $2\sqrt{2}$

7. $\sqrt{32}$

> $4\sqrt{2}$

8. $\sqrt{45}$

> $3\sqrt{5}$

9. $\sqrt{75}$

> $5\sqrt{3}$

10. $\sqrt{98}$

> $7\sqrt{2}$

11. $\sqrt{200}$

> $10\sqrt{2}$

12. $\sqrt{128}$

> $8\sqrt{2}$

13. $\sqrt{12} \times \sqrt{3}$

> 6

14. $\sqrt{8} \times \sqrt{2}$

> 4

15.

$\sqrt{18} \times \sqrt{2}$

> 6

16.

$\sqrt{27} \times \sqrt{3}$

> 9

17.

$\sqrt{20} \times \sqrt{5}$

> 10

18.

$\sqrt{50} \div \sqrt{2}$

> 5

19.

$\sqrt{72} \div \sqrt{2}$

> 6

20.

$\sqrt{75} \div \sqrt{3}$

> 5

21.

$\sqrt{98} \div \sqrt{2}$

> 7

22.

$\sqrt{200} \div \sqrt{2}$

> 10

23.

$\sqrt{12} \times \sqrt{27}$

> 18

24.

$\sqrt{8} \times \sqrt{18}$

> 12

25.

$\sqrt{20} \times \sqrt{45}$

> 30

26.

$\sqrt{32} \times \sqrt{50}$

> 40

27.

$\sqrt{75} \times \sqrt{12}$

> 30

28.

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

> 14

29.

$\sqrt{128} \div \sqrt{8}$

> 4

30.

$\sqrt{200} \div \sqrt{8}$

> 5

MASTER QUESTIONS

M1.

A square has an area of 50cm^2. What is the length of one side in surd form?

> $5\sqrt{2}$ cm

M2.

A rectangle has length $\sqrt{18}$ cm and width $\sqrt{8}$ cm. Calculate its area.

> $12\ \text{cm}^2$

M3.

A right-angled triangle has sides of length $\sqrt{12}$ cm and $\sqrt{27}$ cm. Find the length of the hypotenuse.

> $\sqrt{75}$ cm or $5\sqrt{3}$ cm

M4.

A square garden has an area of 72m^2. Express the perimeter in surd form.

> $24\sqrt{2}$ m

M5.

A cube has a volume of 128cm^3. Find the length of one edge in surd form.

> $2\sqrt{2}$ cm

M6.

A rectangle's area is 48cm^2 and its length is $\sqrt{12}$ cm. Find its width.

> $4\sqrt{3}$ cm

M7.

A circle has an area of $50\pi\ \text{cm}^2$. Express its radius in surd form.

> $5\sqrt{2}$ cm

M8.

A triangle has sides $\sqrt{8}$ cm, $\sqrt{18}$ cm and $\sqrt{50}$ cm. Show that it is right-angled.

> 8 + 18 = 26, 50 = 50, therefore not right-angled

M9.

A rectangular field has length $\sqrt{75}$ m and width $\sqrt{12}$ m. Calculate the diagonal length.

> $\sqrt{147}$ m or $7\sqrt{3}$ m

M10.

A square has a diagonal of length $\sqrt{98}$ cm. Find the area of the square.

> 49 cm^2