GCSE HIGHER · REVISION MAT 2

Surds and exact calculations

1 Work out

$$2\frac{1}{4} \times \frac{2}{3}$$

2 Simplify

$$\sqrt{50}$$

3 Is $\sqrt{2} + \sqrt{3} = \sqrt{5}$?

Show how you know.

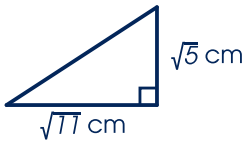
4 A square of side 5 cm is cut from a circle of diameter 10 cm.

Find the exact area left.

5 Show that

$$(\sqrt{5} + 1)^2 = 6 + 2\sqrt{5}$$

6 Find the exact perimeter of this triangle.



7 Show that

$$\sqrt{75} - \sqrt{27} = 2\sqrt{3}$$

8 Write in the form $a + b\sqrt{3}$.

$$\frac{\sqrt{3} + 1}{\sqrt{3} - 1}$$

Mr&Mrs MATHS

ANSWERS · REVISION MAT 2

Surds and exact calculations

1 $\frac{9}{4} \times \frac{2}{3} = \frac{18}{12}$

$\frac{3}{2}$ or $1\frac{1}{2}$

2 $5\sqrt{2}$

3 $(\sqrt{2} + \sqrt{3})^2 = 5 + 2\sqrt{6} \neq 5$

No

4 Circle: $\pi \times 5^2 = 25\pi$

$25\pi - 25 = 25(\pi - 1)$ cm²

5 $5 + \sqrt{5} + \sqrt{5} + 1$

$= 6 + 2\sqrt{5}$

6 Hypotenuse = $\sqrt{11 + 5} = 4$

$(4 + \sqrt{5} + \sqrt{11})$ cm

7 $5\sqrt{3} - 3\sqrt{3}$

$= 2\sqrt{3}$

8 $\frac{(\sqrt{3} + 1)^2}{3 - 1} = \frac{4 + 2\sqrt{3}}{2}$

$2 + \sqrt{3}$

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