GCSE HIGHER · REVISION MAT 3

Surds and exact calculations

1 Work out

$$\frac{5}{6} - \frac{1}{4}$$

2 Simplify

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

3 Ben says $\sqrt{20} = 10\sqrt{2}$.

Show that Ben is wrong.

4 A cylinder has radius 3 cm and height 5 cm.

Find its exact volume.

5 Show that

$$\sqrt{18} + \sqrt{32} = 7\sqrt{2}$$

6 A square has a diagonal of 10 cm.

Find the exact side length and the area.

7 Show that

$$\frac{10}{\sqrt{5}} = 2\sqrt{5}$$

8 Rationalise the denominator

$$\frac{2}{\sqrt{7} + \sqrt{5}}$$

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Surds and exact calculations

1 $\frac{10}{12} - \frac{3}{12}$

$\frac{7}{12}$

2 $\sqrt{16}$

4

3 $\sqrt{20} = \sqrt{4 \times 5}$

$= 2\sqrt{5}$

4 $\pi \times 9 \times 5$

45π cm^3

5 $3\sqrt{2} + 4\sqrt{2}$

$= 7\sqrt{2}$

6 $2s^2 = 100 \Rightarrow s^2 = 50$

Side $5\sqrt{2}$ cm, area 50 cm^2

7 $\frac{10\sqrt{5}}{5}$

$= 2\sqrt{5}$

8 $\frac{2(\sqrt{7} - \sqrt{5})}{7 - 5}$

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

Mr&Mrs MATHS