Real numbers: classification, bounds and approximation — Further practice

Year 7, lower volume • text pp. 35–38 • textbook lessons 18–19

Further practice 11

Classify $-\sqrt{16}$.

A. Rational.

B. Irrational.

Further practice 12

Classify $\sqrt[3]{27}$.

A. Irrational.

B. Rational.

Further practice 13

Simplify $3\sqrt{2} - \sqrt{2}$ exactly, without replacing $\sqrt{2}$ by a decimal.

$$3\sqrt{2} - \sqrt{2}$$

Further practice 14

Use 2 and 3 to give strict bounds for $\sqrt{5}$. Justify by squaring.

Extension 15

A screen shows 0.333333. Can that finite display alone decide whether the intended number is 1/3 or a terminating decimal? Explain.

Extension 16

Use $\frac{223}{100}$ and $\frac{224}{100}$ to give strict bounds for $\sqrt{5}$. Justify by squaring.