

Solutions

Marking: **M1** a correct method, **A1** the correct answer.

Each answer shows the steps, then the **result**.

2.1

- split 90 until every factor is prime

$$90 = 2 \times 3^2 \times 5$$

2.2

- $\sqrt{9} = 3$ and $\frac{2}{3}$ can be written as fractions, so they are rational
- the two irrationals are π and $\sqrt{5}$

2.3

- $24 = 2^3 \times 3$, $36 = 2^2 \times 3^2$
- HCF takes the lowest power of each shared prime

$$\text{HCF} = 2^2 \times 3 = \mathbf{12}$$

3.1

(a)

- HCF: lowest power of each shared prime

$$2^1 \times 3 \times 5 = \mathbf{30}$$

(b)

- LCM: highest power of every prime

$$2^2 \times 3^2 \times 5 = \mathbf{180}$$

3.2

- $18 = 2 \times 3^2$, $24 = 2^3 \times 3$

$$\text{LCM} = 2^3 \times 3^2 = \mathbf{72}$$