

Example

H

Which of these numbers are rational and which are irrational?

$\sqrt{8}$

π

$\frac{5}{9}$

6

0.25

$0.\dot{2}$

Practice

H

Which of these numbers are rational and which are irrational?

$0.\dot{3}$

$\frac{1}{2}$

$\sqrt{4}$

$\sqrt{3}$

π

0.123

Example

H

Simplify

$\sqrt{8}$

Practice**H**

Simplify

1 $\sqrt{18}$

2 $\sqrt{2\frac{1}{4}}$

Example

H

Simplify

$\sqrt{72}$

Practice

H

Simplify

$$\sqrt{108}$$

Example

H

Simplify

$$2\sqrt{10} \times 3\sqrt{6} \times 6\sqrt{2}$$

Practice**H**

Simplify

$$2\sqrt{2} \times 3\sqrt{3} \times 4\sqrt{6}$$

Example

H

Express in the form $a\sqrt{2}$

$$3\sqrt{8} + 6\sqrt{2}$$

Practice**H**

Express in the form $a\sqrt{3}$

$$2\sqrt{3} + 3\sqrt{27} + 4\sqrt{12}$$

Example

H

Expand and simplify

$$(\sqrt{2} + \sqrt{5})^2$$

Practice**H**

Expand and simplify

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

Example

H

Rationalise the denominator

$$\frac{5}{2\sqrt{3}}$$

Practice**H**

Rationalise the denominator

$$\frac{1}{\sqrt{3}} + \frac{1}{\sqrt{27}}$$

Example

H

Rationalise the denominator

$$\frac{2}{3 + 2\sqrt{3}}$$

Practice**H**

Rationalise the denominator

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