

Indices & Surds

Examples:

a Simplify $\sqrt{20}$ as much as possible.

b Write $\sqrt[4]{35}$ using index notation.

Answers:

a $\sqrt{4 \times 5} = 2\sqrt{5}$

b $35^{\frac{1}{4}}$

Work out these problems:

1. Simply these as much as possible.

a. $\sqrt{250}$

b. $\sqrt{63}$

c. $\sqrt{44}$

d. $\sqrt{20}$

e. $\sqrt{135}$

f. $\sqrt{80}$

g. $\sqrt{28}$

h. $\sqrt{150}$

i. $\sqrt{112}$

j. $\sqrt{45}$

2. Write these in index form.

a. $\sqrt{50}$

b. $\sqrt{10}$

c. $\sqrt{90}$

d. $\sqrt[3]{10}$

e. $\sqrt[3]{100}$

f. $\sqrt[3]{20}$

3. Work out these. Give your answer in surd form.

a. $\sqrt{7} \times \sqrt{11}$

b. $\sqrt{13} \times \sqrt{11}$

c. $\sqrt{2} \times \sqrt{17}$

d. $\sqrt{5} \times \sqrt{6}$

e. $3\sqrt{2} \times 7\sqrt{3}$

f. $3\sqrt{15} \times 4\sqrt{13}$

g. $7\sqrt{17} \times 3\sqrt{5}$

h. $5\sqrt{14} \times 2\sqrt{5}$

4. Calculate these.

a. $1000^{\frac{1}{3}}$

b. $512^{\frac{1}{3}}$

c. $343^{\frac{1}{3}}$

d. $81^{\frac{1}{2}}$

e. $64^{\frac{1}{2}}$

f. $144^{\frac{1}{2}}$