

Activity Unit 1. Number and calculation

Do not use a calculator in these exercises

1 Fill in the blank

a $\sqrt[3]{305}$ is between _____ and _____

b $\sqrt{295}$ is between _____ and _____

c $\sqrt[4]{60}$ is between _____ and _____

2 Estimate each root to the nearest whole number.

a $\sqrt{26.3}$

b $\sqrt{35}$

c $\sqrt{407}$

d $\sqrt{171}$

e $\sqrt[3]{1225}$

f $\sqrt[3]{356}$

3 Write each number as a fraction or as an integer

a 5^{-1}

b 7^{-3}

c 10^{-2}

d 2^{-4}

e 15^{-2}

f 20^0

4 Write each expression as a single number

a $2^0 + 2^{-1} + 2^{-2}$

b $3^2 + 3 + 3^0 + 3^{-1}$

c $4 - 4^0 - 4^{-1}$

5 Write each number as a power of 2

a 8

b $\frac{1}{4}$

a $\frac{1}{32}$

d 1

6 Simplify and write answers in index form

a $3^5 \times 3^7$

b $4^9 \times 4^{-5}$

c $2^0 \times 2^{-4}$

d $5^{-2} \times 5^{-5}$

e $8^6 : 8^{-4}$

f $12^2 : 12^5$

g $20^{-7} : 20^{-3}$

h $15^3 : 15^0$

e $a^6 \times a^2$

f $b^5 : b^{-9}$

g $c^{-2} : c^{-1}$

h $d^3 \times d^2$

7 Find the value of n in each equation

a $3^n : 3^8 = 81$

b $5^n \times 25 = 625$

c $n^2 \times n = 216$

d $2^n : 2 = 64$

8 This table shows value of powers of 8

8^1	8^2	8^3	8^4	8^5	8^6
8	64	512	4096	32768	262144

Use the table to find the value of

a 64×4096

b $512 : 64$

c $4096 : 262144$

d $32768 : 512$

9 Determine if each expression is rational or irrational π

34.56

 $\sqrt{3}$

0

 $3\sqrt{9} \times \sqrt{2}$

0.333333

-1

 $\frac{4}{5}$ $\sqrt{16.4}$

2.75812

Rational numbers	Irrational numbers