Powers of 2

$2^6 = 64$

$2^5 = 32$

$2^4 = 16$

$2^3 = 8$

$2^2 = 4$

$2^1 = 2$

$2^0 = 1$

÷2

÷2

÷2

÷2

$2^7 = 128$

$2^0 = 1$

Powers of 3

3^6

$3^5 = 243$

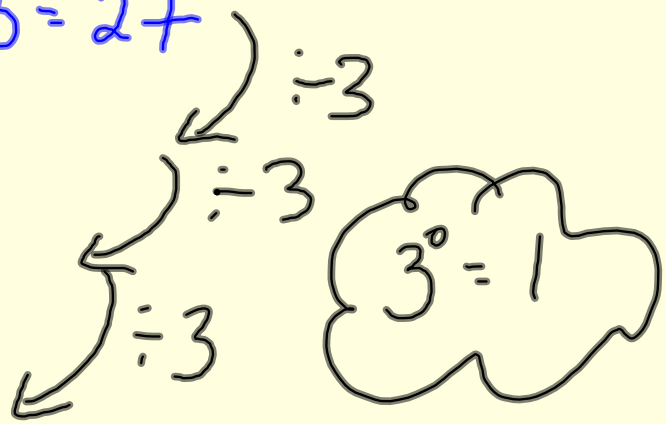
$3^4 = 3 \times 3 \times 3 \times 3 = 81$

$3^3 = 3 \times 3 \times 3 = 27$

$3^2 = 9$

$3^1 = 3$

$3^0 = 1$



Powers of 4

$4^0 = 1$ $4^1 = 4$ $4^2 = 4 \times 4 = 16$ $4^3 = 64$

Powers of 5

$5^0 = 1$ $5^1 = 5$ $5^2 = 25$ $5^3 = 125$

Powers of 10

$10^0 = 1$ $10^1 = 10$ $10^2 = 100$ $10^3 = 1000$

$10^4 = 10\,000$ $10^5 = 100\,000$ $10^6 = 1000\,000$ $10^7 = 10\,000\,000$

Using a calculator for Powers

In your head work out 3^4

You will need the key y^x or x^y or ^ .

Then check using your calculator

Now work out:

1. 3^5
2. 6^7
3. 2^{11}
4. 9^4
5. 6^0

Evaluate

$6^0 = 1$ $4^3 = 64$

$10^6 = 1000\,000$

$2^4 = 16$ $7^2 = 49$

Work out:

$\sqrt{121} = 11$

$\sqrt{196} = 14$

$\sqrt{400} = 20$

$\sqrt{81} = 9$

$\sqrt{1} = 1$

$\sqrt{25} = 5$

$\sqrt{9} = 3$

With a calculator, work out...
Show your whole calculator display and then round to 1 decimal place.

$\sqrt{34256}$

$\sqrt{10}$

$\sqrt{8}$

$\sqrt{2001}$

$\sqrt{99}$

$\sqrt[3]{125} = 5$

$4^3 = 64$

$\sqrt[3]{64} = 4$

$\sqrt[3]{27} = 3$

Cube roots

$1^3=$ $2^3=$ $3^3=$ $4^3=$ $5^3=$

$\sqrt[3]{1}=$

$\sqrt[3]{64}=$

$\sqrt[3]{8}=$

$\sqrt[3]{27}=$

$\sqrt[3]{125}=$

Combining powers

Work out the value of:

$2^3 \times 2^2$

$3^4 \times 3^2$

$5^2 \times 5^3$

$10^6 \times 10^2$

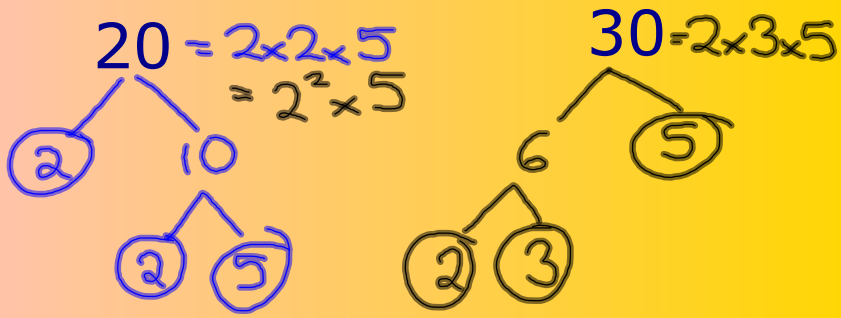
Expressing numbers as the product of their prime factors

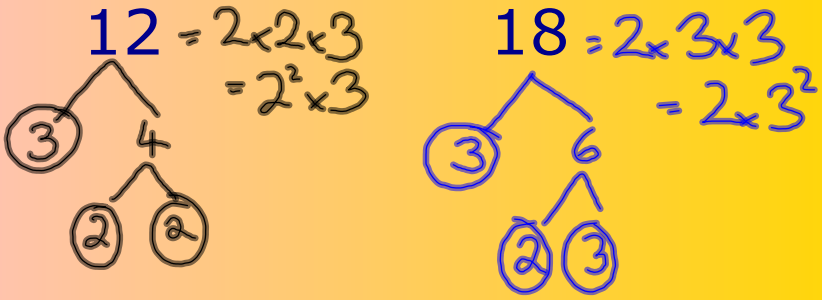
(multiply)

Make a list of the first 10 prime numbers:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29

Factor trees:





40
= 2x2x2x5
= 2³ x 5

50
= 2x5x5
= 2x5²