



### MAKING SIX

2	2	2	=	6
3	3	3	=	6
4	4	4	=	6
5	5	5	=	6
6	6	6	=	6
7	7	7	=	6
8	8	8	=	6
9	9	9	=	6

Insert signs and symbols to make each line a true equation.

Hint: You can use square roots and cube roots.

As an extension you could investigate the factorial sign on your calculator and use factorials to answer the same questions for  $0\ 0\ 0 = 6$  and  $1\ 1\ 1 = 6$ . For example  $1! = 1$  and  $4! = 24$ .

### HELP

The solution for putting signs in the boxes between the 2's to make  $2\ \square\ 2\ \square\ 2 = 6$  is easy but can you do this in more than one way? Remember that you can use  $+$   $-$   $\times$  and  $\div$  and powers and roots.

### NEXT

The factorial symbol which you will find on your calculator is written with a ! (and you will see this on the calculator key).

Factorial  $n$ , written  $n!$  is defined as  $1 \times 2 \times 3 \times 4 \dots \times (n - 1) \times n$  and  $0! = 1$

So  $5! = 1 \times 2 \times 3 \times 4 \times 5 = 120$

Using  $0! = 1$  can you put operations between the numbers in the expressions below to make 6?

Try:  $0\ \square\ 0\ \square\ 0 = 6$  and  $1\ \square\ 1\ \square\ 1 = 6$ .

Can you find different solutions?