In the game of Power Countdown, you use a set of numbers to make a target number, but unlike the usual Countdown game where you can use $+, -, \times$ or $\div$, the only operations you can use are raising a number to a power, taking the reciprocal of a number, or finding the product of two numbers.

Each number can only be used once. You don't have to use all the numbers. There is often more than one way of making a particular target, so see how many different ways you can find.

Here is an example:

2	3	4	5	16	32	**8**

$$2^3 = 8$$
$$32^{\frac{1}{5}} \times 16^{\frac{1}{2}}$$
$$\left(16^{\frac{1}{4}}\right)^3 = \left(16^3\right)^{\frac{1}{4}}$$

Can you find any other ways of making 8?
Are there any ways which use all the numbers?

Here is another selection.

2	4	5	25	27	81	**125**

How many ways are there to make the target number of 125?

Below is a selection of numbers and five targets.

2	5	16	243	343	512

49	**89**	**1024**	**216**	**64**

How many different ways can you find to make each target?

Are there any targets you can't make? How close can you get?