

# Trial and Improvement

Trial and improvement is the easiest type of mathematics you can do. Trial and improvement just means 'take a guess and see how close you are'.

## Part 1 Simple Equations

Using your calculator to help, solve these equations using trial and improvement.

1.  $x + 67 = 123$

5.  $15x = 825$

9.  $2378 + x = 3456$

2.  $89 + x = 436$

6.  $x \times 77 = 1001$

10.  $763 - x = 99$

3.  $x - 67 = 282$

7.  $512 \div x = 8$

11.  $x \times 101 = 10100$

4.  $962 - x = 386$

8.  $x \div 17 = 76$

12.  $x \div 84 = 0.5$

## Part 2 A Number Times Itself

All these equations are of the same type. You must guess the number that, when multiplied by itself, gives you the answer shown.

1.  $x \times x = 81$

4.  $x \times x = 625$

7.  $x \times x = 10000$

2.  $x \times x = 144$

5.  $x \times x = 1296$

8.  $x \times x = 0.25$

3.  $x \times x = 400$

6.  $x \times x = 9801$

9.  $x \times x = 0.01$

## Part 3 Laying out your results

- a. Copy the table on the right.  
b. Use the table to solve the equation:  $x^2 = 30$ .

### Instructions:

- Write a guess for  $x$  in the table.
- Calculate  $x^2$  and add it to the 'Result' column.
- Say whether the result is 'too high' or 'too low'.

	Guess	Result	Too High / Too Low
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

- c. Draw a new table and solve the equation:  $x^2 = 60$ .  
d. Repeat for the equation:  $x^2 = 1000$ .  
e. Repeat for the equation:  $x^3 = 100$ .