

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

| 1 . x + 67 = 123 | 5 . 15 x = 825 | 9 . 2378 + x = 3456 |
|--------------------------|--------------------------|-----------------------------|
| 2 . 89 + x = 436 | 6 . x × 77 = 1001 | 10 . 763 - x = 99 |
| 3 . x - 67 = 282 | 7 . 512 ÷ x = 8 | 11 . x × 101 = 10100 |
| 4 . 962 - x = 386 | 8 . x ÷ 17 = 76 | 12 . x ÷ 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 × x = 81 | 4 . x × x = 625 | 7. x × x = 10000 |
|------------------------|-------------------------|-------------------------|
| 2 . x × x = 144 | 5 . x × x = 1296 | 8 . x × x = 0.25 |
| 3 . x × x = 400 | 6 . x × x = 9801 | 9 . x × 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 x² and add it to the 'Result' column.
- Say whether the result is 'too high' or 'too low'.
- 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: $x^3 = 100$.

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

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