

GCSE Mathematics

Trial and Improvement

1. Bindia is using trial and improvement to find a solution to the equation

$$x^3 - 3x = 34$$

The table shows her first two trials.

x	$x^3 - 3x$	Comment
3	18	Too small
4	52	Too large

Continue the table to find a solution to the equation.
Give your answer correct to 1 decimal place.

Answer.....
(Total 3 marks)

2. Parveen is using trial and improvement to find a solution to the equation

$$x^3 + 7x = 30$$

This table shows her first two trials.

x	$x^3 + 7x$	Comment
2	22	Too small
3	48	Too big

Continue the table to find a solution to the equation. Give your answer to 1 decimal place.

Answer
(Total 3 marks)

3. A solution of the equation $x^3 - 8x = 110$ lies between $x = 5$ and $x = 6$.

Use trial and improvement to find this solution.

Give your answer to one decimal place.

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Answer $x =$

(Total 3 marks)

4. Find, using trial and improvement, an exact solution of

$$3x^2 - 2x = 96$$

x	$3x^2 - 2x$	Comment
1	1	Too small

Answer $x =$

(Total 3 marks)

5. Dario is using trial and improvement to find a solution to the equation

$$x + \frac{1}{x} = 5$$

The table shows his first trial.

x	$x + \frac{1}{x}$	Comment
4	4.25	Too low

Continue the table to find a solution to the equation.
Give your answer to 1 decimal place.

Answer $x = \dots\dots\dots$

(Total 4 marks)