

Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Solving Equations using Iteration

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

Total Marks :

- 1) The equation $3x^3 + 4x - 19 = 0$ has a solution between 1.6 and 1.7.
Use the method of trial and improvement to find this solution correct to 2 decimal places. [4]

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- 2) Use trial and improvement to find the value of x between 4 and 5 satisfying the equation $x^3 - 6x = 68$
Give your answer correct to one decimal place.
Show your working.

Answer _____ [3]

- 3) A solution to the equation $x^3 + 2x - 25 = 0$ lies between 2 and 3.
Find this solution correct to 1 decimal place.

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[4]

- 4) The solution of $x^3 - 8x = 58$ lies between 4 and 5. Use the method of trial and improvement to find the solution correct to one decimal place.
Show all your working.

Answer _____ [3]

5) A solution to the equation

$$x^3 - 3x = 1$$

lies between and 1.8 and 1.9.

Use the method of trial and improvement to find this solution correct to 2 decimal places.

[illegible]

[4]

6) Use trial and improvement to solve $x^3 - 2x = 41$ giving the answer correct to 1 decimal place.

Show your working.

Answer _____ [4]

- 7) A solution to the equation $x^3 - x - 5 = 0$ lies between 1 and 2.
Find this solution correct to 1 decimal place.

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[4]

- 8) One solution of $x^2 + 4x = 50$ lies between 5 and 6

Use the method of **trial and improvement** to find this solution correct to one decimal place.

Show all your working.

Answer $x =$ _____ [3]

- 9) Lizzie knows that a solution to the equation $x^3 - 2x - 40 = 0$ lies between 3 and 4. Find this solution correct to one decimal place. [4]

[illegible]

- 10) x lies between 3 and 4. Use **trial and improvement** to find the value of x , correct to one decimal place, for which

$$2x^2 + 3x = 36$$

Answer $x =$ _____ [3]

- 11) Find the integer that satisfies the equation $x^3 - 2x = 21$.
You must show all your working.

[2]

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- 12) Ciara is using Trial and Improvement to find a value of x to satisfy the equation

$$x + \frac{1}{x} = 6$$

The table shows her first trial.

Value of x	$x + \frac{1}{x}$	Comment
2	2.5	Too Low

Complete the table to help her find the correct value of x to 1 decimal place.

Answer $x =$ _____ [4]

13) A solution to the equation

$$2x^3 - 3x - 17 = 0$$

lies between 2 and 3.

Use the method of trial and improvement to find this solution correct to 1 decimal place.
You must show all your working.

[4]

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- 14) A solution to the equation $5x^3 - 2x - 60 = 0$ lies between 2 and 3.
Use the method of trial and improvement to find this solution correct to 1 decimal place. [4]

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- 15) The length of the rectangle below is 2 cm longer than the width.
The area of the rectangle is 70 cm^2 .
Use the method of trial and improvement to find the width, correct to 1 decimal place. [5]



Diagram not drawn to scale

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- 16) Jade entered a number into her calculator.
To this number, she added the square of the original number and the cube of the original number.
Jade got the answer 432·288.
Find the number that Jade first entered into her calculator.
Show all your working.

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[4]