



Aberdare Community School
Mathematics Department

WJEC GCSE

Higher – Calculator

Algebra

Trial and improvement

Name:

Set:

Date:

Teacher:

11. A solution to the equation

$$2x^3 + x - 8 = 0$$

lies between 1 and 2.

Use the method of trial and improvement to find this solution correct to 1 decimal place.

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7. A solution to the equation

$$x^3 - 5x - 34 = 0$$

lies between 3.7 and 3.8.

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

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11. A solution to the equation $5x^3 - 82x - 45 = 0$ lies between 4 and 5.
Use the method of trial and improvement to find this solution correct to 1 decimal place.

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7. A solution of the equation $x^3 + 2x - 5 = 0$ lies between $x = 1$ and $x = 2$. Find this solution giving your answer correct to one decimal place.

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13. A solution to the equation

$$x^3 + 3x - 8 = 0$$

lies between 1.5 and 1.6.

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

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7. Show that $3x^3 + x - 293 = 0$ has a solution between $x = 4.5$ and $x = 4.6$.

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6. Explain why $5x^3 + 2x^2 + x = 20$ has a solution between $x = 1.4$ and $x = 1.5$. Show all your calculations.

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11. A solution to the equation

$$2x^3 + x - 8 = 0$$

lies between 1 and 2.

Use the method of trial and improvement to find this solution correct to 1 decimal place.

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7. A solution to the equation $x^3 + 11x - 396 = 0$ lies between 6 and 7.
Use the method of trial and improvement to find this solution correct to 1 decimal place.

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9. A solution to the equation $x^3 + x - 1 = 0$ lies between 0 and 1.
Use the method of trial and improvement to find this solution correct to 1 decimal place.

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- (b) A solution to the equation $x^3 - 2x - 240 = 0$ lies between 6 and 7.
Use the method of trial and improvement to find this solution correct to 1 decimal place.

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8. Two friends, Kim and Terry, are planning a camping holiday.

- (a) The floor of their tent can be thought of as a rectangle.
The tent has a ground area of 5.12m^2 .

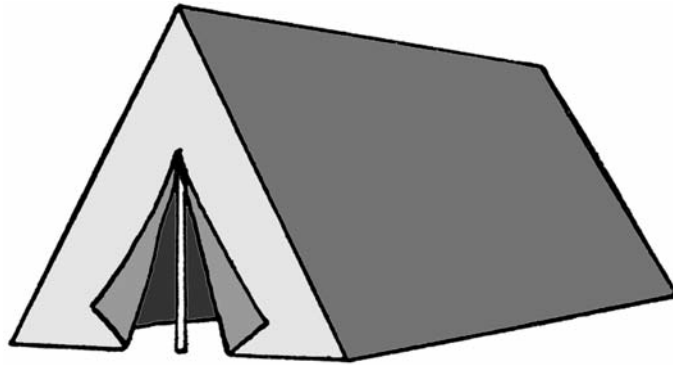


Diagram not drawn to scale

The length of the tent is twice as long as the width.
Calculate the length and width of the floor of the tent.

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Length metres

Width metres

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7. (a) A solution to the equation $2x^3 + x - 100 = 0$ lies between 3 and 4.
Use the method of trial and improvement to find this solution correct to 1 decimal place.

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8. (a) A solution to the equation $2x^3 + x - 100 = 0$ lies between 3 and 4.
Use the method of trial and improvement to find this solution correct to 1 decimal place.

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- 10.** 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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6. 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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5. 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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7. A solution to the equation $3x^3 - x = 4.5$ lies between 1.2 and 1.3.
Find this solution correct to 2 decimal places.

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7. A solution to the equation $x^3 + 3x = 90$ lies between 4 and 5.
Use the method of trial and improvement to find this solution correct to 1 decimal place. [4]

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9. 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]

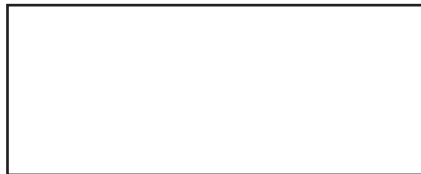


Diagram not drawn to scale

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(d) 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.

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- (c) A solution to the equation $x^3 + 10x - 20 = 0$ lies between 1.5 and 1.6.
Use the method of trial and improvement to find this solution correct to 2 decimal places. [4]

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