

# New Maths GCSE: A20 - Solve Equations using Iteration



Name: .....

Date: .....

$$x_{n+1} = 3 - \frac{1}{x_n}$$

Using a starting value of  $x_1 = 2$ , what is the value of  $x_2$ ?

**A** 3.5                      **B** 2.5

**C** 1                              **D** 2

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = 3 - \frac{1}{x_n}$$

Using a starting value of  $x_1 = 2$ , what is the value of  $x_3$ ?

**A** 2.6                      **B** 0.5

**C** 2.5                      **D** 2.666 ...

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = 3 - \frac{1}{x_n}$$

Using a starting value of  $x_1 = 2$ , what is the solution to  $x = 3 - \frac{1}{x}$  to 2 decimal places?

**A** 2.6                      **B** 2.6180 ...

**C** 2.61                      **D** 2.62

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = \sqrt{4 - x_n}$$

Using a starting value of  $x_1 = 1$ , what is the value of  $x_2$ ?

- A** 1.414 ...    **B** 2  
**C** 1.732 ...    **D** 3

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = \sqrt{4 - x_n}$$

Using a starting value of  $x_1 = 1$ , what is the value of  $x_3$ ?

- A** 1                      **B** 1.505 ...  
**C** 1.579 ...            **D** 1.732 ...

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = \sqrt{4 - x_n}$$

Using a starting value of  $x_1 = 1$ , what is the solution to  $x = \sqrt{4 - x}$  to 3 decimal places?

- A** 1.562                **B** 1.556  
**C** 1.563                **D** 1.561

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = \sqrt{\frac{1}{3 - x_n}}$$

Using a starting value of  $x_1 = 0.6$ , what is the value of  $x_2$ ?

- A** 0.6454 ...    **B** 0.4166 ...  
**C** 0.25            **D** 1.2909 ...

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = \sqrt{\frac{1}{3 - x_n}}$$

Using a starting value of  $x_1 = 0.6$ , what is the value of  $x_3$ ?

- A** 0.6454 ...    **B** 0.3870 ...  
**C** 0.6525 ...    **D** 0.6517 ...

Correct Answer: A B C D

Explanation:

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$$x_{n+1} = \sqrt{\frac{1}{3 - x_n}}$$

Using a starting value of  $x_1 = 0.6$ , what is the solution to  $x = \sqrt{\frac{1}{3-x}}$  to 4 decimal places?

- A** 0.6527    **B** 0.6526  
**C** 0.6525    **D** 0.653

Correct Answer: A B C D

Explanation:

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