Example: Find solutions to the equation: $\sqrt{3x+1} = 5$

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$$\sqrt{3x+1}^2 = 5^2$$

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$$\sqrt{3x+1}^2 = 5^2 = 25$$

Example: Find solutions to the equation: $\sqrt{3x+1} = 5$

$$3x + 1 = \sqrt{3x + 1}^2 = 5^2 = 25$$

Example: Find solutions to the equation: $\sqrt{3x+1} = 5$

• Recall: to undo the square root, we Square both sides:

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Leaving us with the equation:

3x + 1 = 25

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Subtracting 1 from both sides

3x + 1 - 1 = 25 - 1

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3x + 1 = 25

Subtracting 1 from both sides

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$$3x = 24$$

Dividing by 3 on both sides gives us:
 $x = \frac{3x}{3} = \frac{24}{3} = 8$

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3x + 1 = 25Subtracting 1 from both sides

$$3x = 3x + 1 - 1 = 25 - 1 = 24$$

Leaving us with the equation:

$$3x = 24$$

Dividing by 3 on both sides gives us:
 $x = \frac{3x}{3} = \frac{24}{3} = 8$

Conclusion: The solution to $\sqrt{3x+1} = 5$ is: x = 8

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Subtracting 1 from both sides

$$3x = 3x + 1 - 1 = 25 - 1 = 24$$

Leaving us with the equation:

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Conclusion: The solution to $\sqrt{3x+1} = 5$ is: x = 8 Checking the solution x = 8 we get:

$$\sqrt{3\cdot 8+1} = \sqrt{25}$$

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Subtracting 1 from both sides

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ividing by 3 on both sides gives us:
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Conclusion: The solution to $\sqrt{3x+1} = 5$ is: x = 8 Checking the solution x = 8 we get:

$$\sqrt{3 \cdot 8 + 1} = \sqrt{25}$$
$$= 5$$