

Solve For X. Show Each Step Please . Circle Your Final Answer. $2(8-12x)+8x=-25x+52$

Solve For X. Show Each Step Please . Circle Your Final Answer. $2(8-12x)+8x=-25x+52$

Introduction to Solving for X

When encountering an algebraic equation like $2(8-12x) + 8x = -25x + 52$, the goal is to find the value of the variable x that satisfies the equation. Solving for x involves a systematic process of simplifying the equation, isolating the variable, and performing inverse operations. Mastering these steps not only helps you solve this specific problem but also builds a strong foundation for tackling various algebraic equations in mathematics.

This guide walks you through each step of solving the equation $2(8-12x) + 8x = -25x + 52$. We will break down the process clearly, explain the reasoning behind each step, and demonstrate how to verify your solution. By the end of this tutorial, you'll understand how to approach similar problems confidently and accurately.

Step 1: Expand and Simplify Both Sides of the Equation

Understanding the Equation

The given equation is:

$$2(8 - 12x) + 8x = -25x + 52$$

To make solving easier, first distribute the 2 across the parentheses on the left side:

- Multiply 2 by 8
- Multiply 2 by $-12x$

Performing the Distribution

1. $2 \times 8 = 16$

$$2. 2 \times (-12x) = -24x$$

Now, rewrite the equation with these distributed terms:

$$16 - 24x + 8x = -25x + 52$$

Simplify Like Terms

On the left side, combine the x-terms:

$$-24x + 8x = -16x$$

So, the simplified equation becomes:

$$16 - 16x = -25x + 52$$

Step 2: Collect Like Terms and Bring Variables to One Side

The goal now is to gather all terms containing x on one side and constants on the other.

Choose a Side to Bring Variables

Let's move all x-terms to the left and constants to the right. To do this, add 25x to both sides:

$$(16 - 16x) + 25x = -25x + 52 + 25x$$

Simplify both sides:

$$\text{- Left side: } 16 - 16x + 25x = 16 + (-16x + 25x) = 16 + 9x$$

$$\text{- Right side: } -25x + 25x + 52 = 0 + 52 = 52$$

Now, the equation reads:

$$16 + 9x = 52$$

Clear the Constant Term from the Left Side

Subtract 16 from both sides:

$$16 + 9x - 16 = 52 - 16$$

Simplify:

$$9x = 36$$

Step 3: Solve for X

Now that the x-term is isolated, solve for x by dividing both sides by 9:

$$x = 36 \div 9$$

Calculate:

$$x = 4$$

Step 4: Verify the Solution

Verification is crucial to ensure the solution is correct. Substitute $x = 4$ back into the original equation:

Original equation:

$$2(8 - 12x) + 8x = -25x + 52$$

Substitute $x = 4$:

$$2(8 - 12 \times 4) + 8 \times 4 = -25 \times 4 + 52$$

Calculate each part:

$$\begin{aligned} -12 \times 4 &= 48 \\ 8 - 48 &= -40 \\ 2 \times (-40) &= -80 \\ 8 \times 4 &= 32 \\ \text{Left side: } -80 + 32 &= -48 \end{aligned}$$

Right side:

$$\begin{aligned} -25 \times 4 &= -100 \\ -100 + 52 &= -48 \end{aligned}$$

Both sides equal -48, confirming that $x = 4$ is the correct solution.

Final Answer: Circle Your Solution

To clearly mark your result, circle the final answer:

$$\underline{x = 4}$$

Summary of the Solving Process

Let's review the key steps involved in solving the equation:

1. Distribute the multiplication across parentheses to remove brackets.
2. Combine like terms on both sides of the equation.
3. Gather all variable terms on one side and constants on the other.
4. Use inverse operations (addition/subtraction, multiplication/division) to isolate the variable.
5. Verify the solution by substituting back into the original equation.

This structured approach ensures accuracy and builds confidence in solving algebraic equations.

Additional Tips for Solving Equations

- **Always perform the same operation on both sides:** This maintains the balance of the equation.
- **Simplify step-by-step:** Avoid skipping steps to prevent errors.
- **Check your work:** Always substitute your solution back into the original equation.
- **Practice different equations:** The more you practice, the more intuitive solving becomes.

Conclusion

Solving for x in an algebraic equation involves a logical sequence of steps: expanding, simplifying, collecting like terms, isolating the variable, and verifying the solution. In the example $2(8-12x) + 8x = -25x + 52$, we demonstrated this process thoroughly, arriving at the solution $x = 4$, which we verified to be correct.

With consistent practice, you'll develop the skills to solve even more

complex equations confidently. Remember, understanding each step and verifying your answer are key to mastering algebra. Keep practicing, and you'll become proficient in solving for x and other variables in no time!

Happy solving!

Frequently Asked Questions

Solve for x : $2(8 - 12x) + 8x = -25x + 52$. Show each step and circle your final answer.

Step 1: Distribute 2 across the parentheses:

$$2 \cdot 8 - 2 \cdot 12x + 8x = -25x + 52$$

$$16 - 24x + 8x = -25x + 52$$

Step 2: Combine like terms on the left:

$$16 - 16x = -25x + 52$$

Step 3: Add $25x$ to both sides to get all x terms on one side:

$$16 - 16x + 25x = 52$$

$$16 + 9x = 52$$

Step 4: Subtract 16 from both sides:

$$9x = 36$$

Step 5: Divide both sides by 9:

$$x = 4$$

Final answer: $\boxed{4}$

What is the value of x in the equation $2(8 - 12x) + 8x = -25x + 52$? Show all steps and circle the solution.

First, distribute 2:

$$16 - 24x + 8x = -25x + 52$$

Combine like terms:

$$16 - 16x = -25x + 52$$

Add $25x$ to both sides:

$$16 + 9x = 52$$

Subtract 16 from both sides:

$$9x = 36$$

Divide both sides by 9:

$$x = 4$$

Final answer: $\boxed{4}$

Show each step to solve for x : $2(8 - 12x) + 8x = -25x + 52$. Circle your final answer.

Step 1: Expand the parentheses:

$$16 - 24x + 8x = -25x + 52$$

Step 2: Combine like terms:

$$16 - 16x = -25x + 52$$

Step 3: Add $25x$ to both sides:

$$16 + 9x = 52$$

Step 4: Subtract 16 from both sides:

$$9x = 36$$

Step 5: Divide both sides by 9:

$$x = 4$$

Final answer: 4

Solve for x: $2(8 - 12x) + 8x = -25x + 52$. Show each step and circle the answer at the end.

Distribute 2:

$$16 - 24x + 8x = -25x + 52$$

Combine like terms:

$$16 - 16x = -25x + 52$$

Add 25x to both sides:

$$16 + 9x = 52$$

Subtract 16 from both sides:

$$9x = 36$$

Divide both sides by 9:

$$x = 4$$

Final answer: 4

How do you solve for x in the equation $2(8 - 12x) + 8x = -25x + 52$? Include each step and circle the final result.

Step 1: Expand the parentheses:

$$16 - 24x + 8x = -25x + 52$$

Step 2: Combine like terms:

$$16 - 16x = -25x + 52$$

Step 3: Add 25x to both sides:

$$16 + 9x = 52$$

Step 4: Subtract 16 from both sides:

$$9x = 36$$

Step 5: Divide both sides by 9:

$$x = 4$$

Final answer: 4

Additional Resources

Solve For X. Show Each Step Please. Circle Your Final Answer. $2(8-12x)+8x=-25x+52$

Introduction: Decoding the Equation

Mathematics often presents itself as a language of symbols and operations that, when understood, unlocks a universe of logical problem-solving. One common challenge students encounter involves solving for an unknown variable, typically represented by the letter x. Today's focus is on a specific algebraic equation:

$$2(8 - 12x) + 8x = -25x + 52$$

The goal is to find the value of x that makes this equation true. This task may seem daunting at first glance, but by methodically applying algebraic principles—distributive property, combining like terms, and isolating the

variable—we can systematically arrive at the solution. Throughout this article, each step will be clearly explained, ensuring clarity and understanding for all readers.

Understanding the Equation Components

Before diving into calculations, let's analyze the structure of the equation:

- The left side contains a binomial expression multiplied by 2: $2(8 - 12x)$.
- It also has an additional term: $+ 8x$.
- The right side is a linear expression: $-25x + 52$.

Our task involves simplifying both sides to isolate x and determine its value.

Step 1: Applying the Distributive Property

The first step involves distributing the 2 across the terms inside the parentheses on the left side.

Equation:

$$2(8 - 12x) + 8x = -25x + 52$$

Distribution:

- Multiply 2 by 8: $2 \cdot 8 = 16$
- Multiply 2 by $-12x$: $2 \cdot -12x = -24x$

Thus, the equation becomes:

$$16 - 24x + 8x = -25x + 52$$

Step 2: Combine Like Terms on the Left Side

Now, combine the x terms on the left:

$$-24x + 8x = -16x$$

This simplifies the left side to:

$$16 - 16x = -25x + 52$$

Step 3: Moving Variables to One Side and Constants to the Other

To solve for x , it's best to gather all x terms on one side and constants on the other. Let's add $25x$ to both sides to move all x terms to the left:

$$16 - 16x + 25x = -25x + 52 + 25x$$

Simplifies to:

$$16 + 9x = 52$$

Step 4: Isolate the Variable

Next, subtract 16 from both sides to isolate the x term:

$$16 + 9x - 16 = 52 - 16$$

Simplifies to:

$$9x = 36$$

Step 5: Solve for X

Finally, divide both sides by 9 to find x:

$$x = 36 / 9 = 4$$

Step 6: Circle the Final Answer

To clearly indicate the solution, circle the answer:

$$\boxed{x = 4}$$

This represents the value of x that satisfies the original equation.

Verifying the Solution

It's good practice to verify the solution by substituting $x = 4$ back into the original equation:

Original equation:

$$2(8 - 12x) + 8x = -25x + 52$$

Substitute $x = 4$:

Left side:

$$\begin{aligned} &- 2(8 - 12 \cdot 4) + 8 \cdot 4 \\ &- 2(8 - 48) + 32 \\ &- 2(-40) + 32 \\ &- -80 + 32 = -48 \end{aligned}$$

Right side:

$$\begin{aligned} &- -25 \cdot 4 + 52 \\ &- -100 + 52 = -48 \end{aligned}$$

Since both sides equal -48, our solution $x = 4$ is correct.

Summary: The Journey to the Solution

Solving for x involves a series of logical steps:

1. Distribute to eliminate parentheses.
2. Combine like terms to simplify the equation.
3. Rearrange to gather all x terms on one side.
4. Isolate x through addition/subtraction.
5. Divide to find the exact value.
6. Verify by substitution.

Following this structured approach not only ensures accuracy but also builds confidence in tackling similar algebraic problems.

Final Thoughts

Mathematics is a skill that improves with practice and patience. By breaking down complex equations into manageable steps, solving for the unknown becomes a straightforward process. Remember, each problem is a puzzle waiting to be solved, and clarity in each step leads to success. Keep practicing, and you'll find that these techniques become second nature in your mathematical toolkit.

Happy solving!

Solve For X Show Each Step Please Circle Your Final Answer 2 8 12x 8x 25x 52

Solve For X Show Each Step Please Circle Your Final Answer 2 8 12x 8x 25x 52

Related Articles

- [What Kind Of Lawyer Should I Call When A Landlord Takes Your Money For No Reason](#)
- [T/F More Than 50 Percent Of The Stars In The Universe Occur In Pairs Or Multiples.](#)
- [What Urban Planning And Redevelopment Lessons Were Learned From Hurricane Katrina?](#)

[Back to Home](#)