

2. Find The Value Of X.(1 Point)(5x)(3x+28)0 140200 120 19

2. Find The Value Of X.(1 Point)(5x)(3x+28)0 140200 120 19

Understanding the Problem: Finding the Value of X in Algebraic Expressions

When faced with algebraic expressions and problems involving variables like 'x', the key to success lies in understanding the structure of the problem, identifying the relevant mathematical principles, and applying appropriate methods to find the value of the variable. The problem statement:

2. Find The Value Of X.(1 Point)(5x)(3x+28)0 140200 120 19

may seem ambiguous at first glance due to the notation and symbols, but with a systematic approach, we can decipher the intent and solve for 'x'.

This article aims to guide students and learners through the process of solving such algebraic problems efficiently, with detailed explanations, step-by-step solutions, and tips for mastering similar questions. Additionally, we will explore related concepts such as algebraic expressions, equations, and problem-solving strategies to enhance your understanding and problem-solving skills.

Deciphering the Problem Statement

Before jumping into calculations, it's essential to interpret the problem correctly.

Breaking down the problem:

- The phrase: "Find The Value Of X." indicates that the goal is to determine the numerical value of the variable 'x'.
- The expression: $(5x)(3x + 28)$ suggests a multiplication of two expressions:
 - First expression: $5x$
 - Second expression: $3x + 28$

- The sequence: 0 14 0 20 0 12 0 19 appears to be a series of options, possibly multiple-choice answers, or perhaps a notation indicating options or values.

Clarifying the notation:

- The '0's could be representing options or placeholders for numbers, such as 'Option A: 14', 'Option B: 20', etc.

- Alternatively, the '0' symbols might be typos or formatting issues, but considering standard multiple-choice questions, they could denote options.

Assumption for clarity:

Given typical algebra problems, the question might be asking:

> "Find the value of x in the expression $(5x)(3x + 28)$, which equals one of the options: 14, 20, 12, or 19."

Or possibly:

> "Calculate the value of x such that $(5x)(3x + 28)$ equals one of the options."

Understanding Algebraic Expressions and Equations

To solve the problem, it's crucial to understand key algebra concepts involved:

1. Algebraic Expressions

An algebraic expression combines variables and constants with operations such as addition, subtraction, multiplication, and division. For example:

- $5x$
- $3x + 28$
- $(5x)(3x + 28)$

2. Equations and Solutions

An equation states that two expressions are equal, often involving a variable to solve for:

- Example: $(5x)(3x + 28) = \text{value}$

3. Methods to Find 'x'

- Factoring: Breaking down expressions into factors to simplify and solve.
- Quadratic Formula: Used when the equation reduces to quadratic form.
- Substitution: Replacing parts to simplify complex expressions.

Step-by-Step Solution to Find the Value of X

Assuming the problem is:

> Find the value of x such that:

> $(5x)(3x + 28) =$ one of the options: 14, 20, 12, 19

We will test each option to see which satisfies the equation.

Step 1: Express the equation

The expression:

$$(5x)(3x + 28)$$

which simplifies to:

$$15x^2 + 140x$$

Our goal:

Find x such that:

$$15x^2 + 140x = \text{option value}$$

Step 2: Test each option

We substitute each option into the expression to see if it satisfies the equation.

Option A: $x = 14$

Calculate:

$$15(14)^2 + 140(14) = ?$$

$$- 14^2 = 196$$

$$- 15 \ 196 = 2940$$

$$- 140 \ 14 = 1960$$

Sum:

$$2940 + 1960 = 4900$$

Is 4900 equal to 14? No.

Option B: $x = 20$

Calculate:

$$- 20^2 = 400$$

$$- 15 \ 400 = 6000$$

$$- 140 \ 20 = 2800$$

Sum:

$$6000 + 2800 = 8800$$

Is 8800 equal to 20? No.

Option C: $x = 12$

Calculate:

$$- 12^2 = 144$$

$$- 15 \ 144 = 2160$$

$$- 140 \ 12 = 1680$$

Sum:

$$2160 + 1680 = 3840$$

Is 3840 equal to 12? No.

Option D: $x = 19$

Calculate:

- $19^2 = 361$
- $15 \cdot 361 = 5415$
- $140 \cdot 19 = 2660$

Sum:

$$5415 + 2660 = 8075$$

Is 8075 equal to 19? No.

Step 3: Re-evaluate the problem

Since none of the options satisfy the equation directly, perhaps the original problem asks for the value of 'x' such that:

$(5x)(3x + 28) =$ a specific number, or perhaps the options are the values for 'x' itself, or the problem is to find which value of 'x' makes the expression equal to one of these options.

Alternatively, perhaps the problem is to find 'x' such that:

$$(5x)(3x + 28) = 0$$

or that the product equals a specific number provided earlier.

Alternative Approach: Solving the Equation

Suppose the question asks:

"Find the value of x such that $(5x)(3x + 28) = 0$ "

This is a standard zero-product property problem.

Step 1: Set each factor equal to zero:

- $5x = 0 \rightarrow x = 0$
- $3x + 28 = 0 \rightarrow x = -28/3 \approx -9.33$

Step 2: List solutions:

- $x = 0$

- $x = -28/3$

Considering multiple-choice options:

If options include 14, 20, 12, 19, none match these solutions, indicating the problem might differ.

Understanding the Context: Multiple Choice and Common Algebra Problems

In many algebra problems, especially in exams or quizzes, the task is to find the value of 'x' that satisfies a given expression or equation, with options provided for selection.

Here are common types of problems similar to the given one:

- Evaluating expressions for given 'x' values
- Solving quadratic equations derived from algebraic expressions
- Finding 'x' that makes an expression equal to a specified value
- Factoring and solving polynomial equations

Key Strategies for Solving Algebraic Problems Involving 'X'

Regardless of the specific problem form, the following strategies can be applied:

1. Carefully Read the Problem

- Identify what is asked: Is it to evaluate, solve, or verify?
- Note all given information and options.

2. Simplify Expressions

- Expand products if necessary.

- Combine like terms.

3. Set Up Equations

- Use algebraic principles to set equalities when necessary.

4. Use Appropriate Methods

- Factoring quadratic or higher-degree polynomials.

- Applying the quadratic formula.

- Substituting options to test solutions.

5. Verify Solutions

- Plug the found value of 'x' back into the original expression to check correctness.

Conclusion: Mastering the Skill of Finding the Value of 'X'

Solving for 'x' in algebraic expressions is a fundamental skill that forms the backbone of more advanced mathematics. Whether the problem involves simple linear equations, quadratic equations, or more complex polynomial expressions, understanding the principles of algebra, practicing various problem types, and employing systematic methods are essential.

In the context of the original problem, decoding the notation and clarifying what is being asked is crucial. Often, multiple-choice options are provided, and testing each can help identify the correct solution.

By mastering these techniques, students can confidently approach similar problems, improve their problem-solving speed, and develop a strong foundation for future mathematical challenges.

Additional Tips for Success in Algebra Problems

- Always read the problem carefully to understand what is being asked.

- Write down all steps clearly to avoid errors.

- Practice a variety of problems to familiarize yourself with different types of questions.
- Use algebraic identities and factoring techniques efficiently.
- Check your solutions by substituting back into the original expression or equation.

In summary, finding the value of 'x' involves understanding the structure of the algebraic expression, applying suitable algebraic methods, and verifying solutions. With practice, solving such problems becomes quicker and more intuitive, enabling success in exams and real-world applications alike.

Keywords: find the value of x, algebraic expressions,

Frequently Asked Questions

How do I find the value of x in the expression $(5x)(3x + 28)$?

To find x, expand the expression to $15x^2 + 140x$ and then set it equal to the given value, solving for x accordingly.

What is the first step to solve $(5x)(3x + 28)$ for a specific value?

The first step is to expand the expression to $15x^2 + 140x$ and then set it equal to the given value to solve for x.

If the product of $(5x)$ and $(3x + 28)$ equals 20, how do I find x?

Set $15x^2 + 140x = 20$, then rearrange into a quadratic equation and solve for x.

What quadratic equation do I get when solving $(5x)(3x + 28) = 20$?

You get $15x^2 + 140x - 20 = 0$.

What are the solutions for x when solving $15x^2 + 140x - 20 = 0$?

Use the quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, with $a=15$, $b=140$, $c=-20$.

How can I determine which value of x is correct after solving the quadratic?

Calculate both solutions and verify which one satisfies the original problem context or equation.

Are there alternative methods to solve for x without using the quadratic formula?

Yes, if the quadratic factors nicely, you can factor the equation directly; otherwise, the quadratic formula is most reliable.

What is the significance of the options 14, 20, 12, and 19 in this problem?

These options are potential solutions for x; solving the equation will help identify which, if any, match these choices.

Additional Resources

Find The Value Of X is a common algebraic problem that exemplifies the foundational skills in solving linear equations. Such problems are integral to understanding algebra and are frequently encountered in exams, homework, and real-world applications involving calculations and logical reasoning. This particular question combines multiple algebraic expressions and constants, requiring a systematic approach to find the unknown value of x. In this comprehensive review, we will analyze the problem step-by-step, discuss relevant concepts, explore different methods of solving, and provide insights into common pitfalls and effective strategies.

Understanding the Problem

At first glance, the problem is presented as:

Find The Value Of X. (1 Point) $(5x)(3x + 28) = 0$ 14 20 12 19

This appears to be a multiple-choice question asking for the correct value of

x , with options 14, 20, 12, and 19. The expression $(5x)(3x + 28)$ suggests a multiplication of a monomial and a binomial, which should be simplified or analyzed to find x .

The key challenge is understanding what the symbols `0` represent—likely, they are placeholders for an equality or inequality sign, such as $\text{`=}`$, or perhaps a notation indicating options. Given standard question formats, it's probable that the problem asks:

"Find the value of x such that $(5x)(3x + 28)$ equals one of the options (14, 20, 12, 19)."

Alternatively, since the options are simply numbers, the question might be:

"Find the value of x that makes the expression equal to one of these options."

To proceed, we will consider the most common interpretation: the expression equals one of these options, and we need to determine which one.

Breaking Down the Expression

Step 1: Expand the Expression

The expression $(5x)(3x + 28)$ can be expanded using the distributive property:

$$\begin{aligned} & \text{\[} \\ & (5x)(3x + 28) = (5x)(3x) + (5x)(28) = 15x^2 + 140x \\ & \text{\]} \end{aligned}$$

This quadratic expression now represents the value of the expression for a given x .

Step 2: Set up Equations Based on Options

Since the options are numerical values, the logical approach is to assume that the expression equals each of the options in turn and see which value of x satisfies the equation:

$$\begin{aligned} & \text{\[} \\ & 15x^2 + 140x = \text{\texttt{\text{Option}}} \\ & \text{\]} \end{aligned}$$

We will test each option:

- Option A: 14
- Option B: 20
- Option C: 12
- Option D: 19

For each, solve:

$$15x^2 + 140x = \text{Option}$$

Solving for X: Step-by-Step Analysis

Option 1: When the expression equals 14

Set:

$$15x^2 + 140x = 14$$

Rearranged as:

$$15x^2 + 140x - 14 = 0$$

Divide the entire equation by 1 (or simplify if possible). Since coefficients are manageable, proceed with quadratic formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where:

- $a = 15$
- $b = 140$
- $c = -14$

Calculate discriminant:

$$\Delta = b^2 - 4ac$$

$$D = b^2 - 4ac = 140^2 - 4 \times 15 \times (-14) = 19600 + 840 = 20440$$

Since the discriminant is positive, real solutions exist.

Calculate:

$$x = \frac{-140 \pm \sqrt{20440}}{2 \times 15}$$

Estimate $(\sqrt{20440})$:

$$\sqrt{20440} \approx 143.02$$

Thus,

$$x = \frac{-140 \pm 143.02}{30}$$

Two solutions:

$$\begin{aligned} - \quad & (x = \frac{-140 + 143.02}{30} = \frac{3.02}{30} \approx 0.1007) \\ - \quad & (x = \frac{-140 - 143.02}{30} = \frac{-283.02}{30} \approx -9.434) \end{aligned}$$

Neither of these approximate x-values is close to the options 14, 20, 12, or 19, indicating that the expression does not equal 14 at these x-values.

Option 2: When the expression equals 20

Set:

$$15x^2 + 140x = 20$$

Rearranged:

$$15x^2 + 140x - 20 = 0$$

Discriminant:

$$D = 140^2 - 4 \times 15 \times (-20) = 19600 + 1200 = 20800$$

Square root:

$$\sqrt{20800} \approx 144.22$$

Solutions:

$$x = \frac{-140 \pm 144.22}{30}$$

Calculations:

$$\begin{aligned} - \quad & \left(x = \frac{-140 + 144.22}{30} = \frac{4.22}{30} \approx 0.1407\right) \\ - \quad & \left(x = \frac{-140 - 144.22}{30} = \frac{-284.22}{30} \approx -9.474\right) \end{aligned}$$

Again, solutions do not match options 14, 20, 12, or 19.

Option 3: When the expression equals 12

Set:

$$15x^2 + 140x = 12$$

Rearranged:

$$15x^2 + 140x - 12 = 0$$

Discriminant:

$$D = 140^2 - 4 \times 15 \times (-12) = 19600 + 720 = 20320$$

Square root:

$$\sqrt{20320} \approx 142.8$$

\]

Solutions:

$$\begin{aligned} & \backslash[\\ x &= \frac{-140 \pm 142.8}{30} \\ & \backslash] \end{aligned}$$

Calculations:

$$\begin{aligned} & - \backslash(x = \frac{2.8}{30} \approx 0.0933\backslash) \\ & - \backslash(x = \frac{-282.8}{30} \approx -9.427\backslash) \end{aligned}$$

Again, no match with options 14, 20, 12, or 19.

Option 4: When the expression equals 19

Set:

$$\begin{aligned} & \backslash[\\ 15x^2 + 140x &= 19 \\ & \backslash] \end{aligned}$$

Rearranged:

$$\begin{aligned} & \backslash[\\ 15x^2 + 140x - 19 &= 0 \\ & \backslash] \end{aligned}$$

Discriminant:

$$\begin{aligned} & \backslash[\\ D = 140^2 - 4 \times 15 \times (-19) &= 19600 + 1140 = 20740 \\ & \backslash] \end{aligned}$$

Square root:

$$\begin{aligned} & \backslash[\\ \sqrt{20740} &\approx 144.02 \\ & \backslash] \end{aligned}$$

Solutions:

$$\begin{aligned} & \backslash[\\ x &= \frac{-140 \pm 144.02}{30} \\ & \backslash] \end{aligned}$$

Calculations:

- $x = \frac{4.02}{30} \approx 0.134$
- $x = \frac{-284.02}{30} \approx -9.467$

Again, no direct match with the options provided.

Alternative Interpretations and Clarifications

Given that none of the above calculations directly match the options, it's possible the original problem is slightly different. For example:

- The question might be asking for which value of x makes the expression equal to one of the options.
- Or, perhaps, the question is asking for the value of x that satisfies the equation $(5x)(3x + 28) = \text{some specific value}$, with the options being potential solutions.

Another interpretation is that the options are the values of the expression $(5x)(3x + 28)$ itself, and the question is to find x corresponding to each option.

Testing Each Option as the Value of the Expression

Instead of assuming the options are the target values, perhaps the question is:

"Find the value of x such that $(5x)(3x + 28)$ equals each of the options."

Let's verify one of these options:

Test with option 14:

Set:

$$\begin{aligned} & [(5x)(3x + 28) = 14] \end{aligned}$$

or

$$\begin{aligned} & \backslash[\\ & 15x^2 + 140x = 14 \\ & \backslash] \end{aligned}$$

which we've already solved and found approximate solutions. The solutions do not equate to integral or simple fractional values matching the options.

Similarly, testing options 20, 12, 19 yields quadratic equations with irrational solutions not matching options.

Summary of Findings and Recommendations

- The algebraic expansion $(5x)(3x + 28)$ simplifies to $15x^2 + 140x$.
- Without additional context, such as an equality sign or a specific target value, the problem remains ambiguous.
- The options (14, 20, 12, 19

[2 Find The Value Of X 1 Point 5x 3x 28 O 14o20o 12o 19](#)

2 Find The Value Of X 1 Point 5x 3x 28 O 14o20o 12o 19

Related Articles

- [What Is The Volume Of The Rectangular Pyramid Shown Below?](#)
- [How Do You Find The X And Y Intercepts For \(x-1\)+ \(y + 8\)= 4](#)
- [What Is The Surface Area Of Therectangular Prism Below?](#)

[Back to Home](#)