Solve 7c - 5c + 4 = 4c - 10c = 5c = 7c = 2c = -7** Giving BRANIEST To FIRST To Answer **

Solve 7c - 5c + 4 = 4c - 10c = 5c = 7c = 2c = -7 Giving BRANIEST To FIRST To Answer

---

Understanding the Problem and Its Significance

Introduction to the Equation Chain

The given problem presents a chain of equalities involving multiple expressions with the variable c. It appears as:

$$ 7c - 5c + 4 = 4c - 10c = 5c = 7c = 2c = -7 $$

At first glance, this sequence may seem confusing because of the multiple equal signs. The key is to interpret this as a chain of equalities, which means each expression is equal to the next:

$$ (7c - 5c + 4) = (4c - 10c) = 5c = 7c = 2c = -7 $$

This chain suggests that all these expressions are equal to a common value.

Why Is This Important?

Understanding how to interpret such chained equalities is crucial for solving complex algebraic problems. It tests your ability to:

- Simplify expressions
- Recognize relationships between different parts of an equation
- Use properties of equality to find the value of c

Step-by-Step Approach to Solving the Chain of Equalities

Step 1: Rewrite the Chain for Clarity

Express the chain explicitly:

$$
\begin{aligned}
&(1) \quad 7c - 5c + 4 \\
&(2) \quad 4c - 10c \\
&(3) \quad 5c \\
&(4) \quad 7c \\
&(5) \quad 2c \\
&(6) \quad -7
\end{aligned}
$$

And all are equal:

$$
(1) = (2) = (3) = (4) = (5) = (6)
$$

Step 2: Simplify Each Expression

Simplify Expression (1): $7c - 5c + 4$

$$
7c - 5c + 4 = (7c - 5c) + 4 = 2c + 4
$$

Simplify Expression (2): $4c - 10c$

$$
4c - 10c = -6c
$$

List of simplified expressions:

$$
\begin{aligned}
&(1) \quad 2c + 4 \\
&(2) \quad -6c \\
&(3) \quad 5c \\
&(4) \quad 7c \\
&(5) \quad 2c \\
&(6) \quad -7
\end{aligned}
$$

Step 3: Set the Expressions Equal and Solve

Equality 1: $2c + 4 = -6c$

$$
2c + 4 = -6c
$$
Add $6c$ to both sides:
$$
2c + 6c + 4 = 0
$$
$$
8c + 4 = 0
$$
Subtract 4:
$$
8c = -4
$$
Divide both sides by 8:
$$
c = -\frac{4}{8} = -\frac{1}{2}
$$

Equality 2: $-6c = 5c$

$$
-6c = 5c
$$
Bring all to one side:
$$
-6c - 5c = 0
$$
$$
-11c = 0
$$
$$
c = 0
$$

Conflict Between Solutions

From the previous step, the first equality led us to $c = -\frac{1}{2}$, while the second gives $c = 0$. These are inconsistent, indicating a potential issue in the chain—perhaps the chain is only valid if all expressions are equal to the same value.

Step 4: Cross-Verify with Remaining Expressions

Express all simplified expressions in terms of c and see if a consistent solution exists

Recall the simplified expressions:
- $2c + 4$
- $-6c$
- $5c$
- $7c$
- $2c$
- -7

Set pairs equal to each other, especially focusing on the initial conditions and the last expression to find a common c.

Step 5: Use the Last Expression -7 as a Reference

Assuming all expressions equal -7, as suggested by the chain:

$$
2c + 4 = -7
$$
Solve for c:
$$
2c = -7 - 4 = -11
$$
$$
c = -\frac{11}{2} = -5.5
$$

Now verify if this c satisfies the other expressions:

- $-6c = -6 \times -5.5 = 33$
- $5c = 5 \times -5.5 = -27.5$
- $7c = 7 \times -5.5 = -38.5$
- $2c = 2 \times -5.5 = -11$

Check if all these are equal to -7:

- $-6c = 33 \neq -7$
- $5c = -27.5 \neq -7$
- $7c = -38.5 \neq -7$
- $2c = -11 \neq -7$

No, they do not match -7. Therefore, assuming all expressions equal -7 leads to inconsistency.

Step 6: Find the Common Value for the Chain

Since the chain indicates all expressions are equal, the only consistent way is to set all simplified expressions equal pairwise and find a value of c that satisfies all conditions.

Let's verify the key equalities:

- $2c + 4 = -6c$ (already solved: $c = -\frac{1}{2}$)
- $-6c = 5c$ (implies $c=0$)
- $5c = 7c$ (implies $c=0$)
- $7c = 2c$ (implies $c=0$)
- $2c = -7$ (implies $c = -\frac{7}{2} = -3.5$)

Note that:

- $c = 0$ satisfies the equalities $-6c = 5c$ and $5c = 7c$
- But $2c = -7$ gives $c = -3.5$, which contradicts previous solutions.

Thus, only one consistent solution exists if all expressions are equal to a particular value, and the only value that satisfies all at once is when:

$$
2c + 4 = -7
$$
which yields $c = -\frac{11}{2}$.

Test this value:

- $-6c = -6 \times -\frac{11}{2} = 33 \neq -7$
- $5c = 5 \times -\frac{11}{2} = -\frac{55}{2} = -27.5 \neq -7$

Again, inconsistency.

Final Analysis and Conclusion

Summary of Findings

- The chain of equalities involves multiple expressions, each simplified to a form involving c.
- Simplification yields expressions like $2c + 4$, $-6c$, $5c$, $7c$, $2c$, and the constant -7.
- Attempting to find a common c that satisfies all equalities leads to conflicting solutions.
- The only way for the entire chain to be consistent is for all expressions to equal the same value, but the calculations show contradictions.

Implication

The chain as presented is inconsistent unless more context or constraints are provided. It appears to be a trick question or a test of algebraic reasoning under conflicting conditions.

Key Takeaways and Tips for Solving Similar Problems

- **Always simplify each expression first:** Simplify complex algebraic expressions before attempting to solve.
- **Identify the structure of the problem:** Recognize whether the problem involves a chain of equalities, inequalities, or systems.
- **Check for consistency:** When multiple equalities are involved, verify if solutions satisfy all conditions simultaneously.