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TE 855 - Gundlach

Math Problem Analysis

Solve for *x* in $5x + 8 = 3x + 16$

We need to combine like terms (in this case terms with an *x* and terms without an *x*). In order to do so I am going to use inverse (opposite) operations. In order to keep the equation balanced (equal) we will perform the same operations to both sides of the equals sign.

Because 5 is larger than 3 we are going to subtract *3x* from both sides of the equals sign.

$$5x + 8 = 3x + 16$$
$$\text{-}3x \qquad \text{-}3x$$
$$2x + 8 = 16$$

Our aim is to get the *x* alone. The 8 is connected to the *x* through addition so we subtract 8 from both sides of the equal sign to get closer to getting the *x* alone.

$$2x + 8 = 16$$
$$\text{-}8 \quad \text{-}8$$
$$2x = 8$$

Our aim is to get the *x* alone. The 2 is connected to the *x* through multiplication so we divide from both sides of the equal sign to get the *x* alone.

$$\frac{2x}{2} = \frac{8}{2}$$
$$x = 4$$