

Enrichment

Student Edition
Pages 150–154

Identities

Any equation that is true for every value of the variable is called an **identity**. When you try to solve an identity, you end up with a statement that is always true. Here is an example.

$$8 - (5 - 6x) = 3(1 + 2x)$$

$$8 - 5 + 6x = 3 + 6x$$

$$3 + 6x = 3 + 6x$$

State whether each equation is an identity. If it is not, find its solution.

1. $2(2 - 3x) = 3(3 + x) + 4$

2. $5(m + 1) + 6 = 3(4 + m) + (2m - 1)$

3. $(5t + 9) - (3t - 13) = 2(11 + t)$

4. $14 - (6 - 3c) = 4c - c$

5. $3y - 2(y + 19) = 9y - 3(9 - y)$

6. $3(3h - 1) = 4(h + 3)$

7. Start with the true statement $3x - 2 = 3x - 2$. Use it to create an identity of your own.

8. Start with the false statement $1 = 2$. Use it to create an equation with no solution.