

Learning Target: Tell whether an equation involving a variable is true or false for a given value of the variable.

Success Criteria:

- I can evaluate an algebraic expression.
- I can tell whether an equation is true or false.

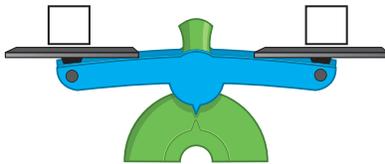
Think and Grow

Example Tell whether $a + 9 = 15$ is true or false when $a = 6$.

$$a + 9 = 15$$

$$\underline{\hspace{1cm}} + 9 \stackrel{?}{=} 15$$

$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}} \quad \checkmark$$



Write the equation.

Substitute 6 for a .

Add.

So, when $a = 6$, the equation is _____.

For an equation to be true, both sides of the equal sign must have the same value. The scale is balanced.



Example Tell whether $\frac{m}{12} = 8$ is true or false when $m = 84$.

$$\frac{m}{12} = 8$$

$$\frac{\square}{12} \stackrel{?}{=} 8$$

$$\underline{\hspace{1cm}} \neq \underline{\hspace{1cm}} \quad \times$$

Write the equation.

Substitute 84 for m .

Divide.

So, when $m = 84$, the equation is _____.

The symbol \neq means is not equal to.



Show and Grow

Tell whether the equation is true or false for the given value of the variable.

1. $k + 7 = 20; k = 13$

2. $13 - q = 6; q = 5$

3. $8 \times y = 56; y = 7$

4. $\frac{z}{3} = 13; z = 42$

Practice

Name _____

Tell whether the equation is true or false for the given value of the variable.

5. $b - 9 = 17; b = 28$

6. $4 \times g = 24; g = 6$

7. $\frac{60}{n} = 12; n = 5$

8. $16 + d = 45; d = 19$

9. $35 = h + 27; h = 8$

10. $75 = 15 \times j; j = 7$

11. $p \div 3 = 13 + 4; p = 54$

12. $9 \times 4 = w - 4; w = 40$

13. **MP Number Sense** Which value of the variable makes the equation true?

$$44 + c = 92 - 25$$

$c = 67$

$c = 48$

$c = 23$

14. **MP Reasoning** Tell whether the equation is true or false when $z = 2 \times 4$. Explain your reasoning.

$$23 + z = 100$$

15. **Modeling Real Life** You score 22 points during a basketball game. Your friend scores the same total number of points as you. She scores 13 points in the second half. Which equation represents the situation? Did your friend score 9 points in the first half? Explain.

$22 + 13 = f$

$22 = f + 13$

$f - 13 = 22$



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