

Intro to Expressions & Equations Practice Problems

Tell whether each example is an expression or an equation.

1. seventeen

7. $5y - 3$

2. $3(a - 2)$

8. six less than a number

3. Four more than a number is equal to eight.

9. x

4. $\frac{2}{3}$

10. Six less than a number is equal to the quotient of 20 and a number.

5. $5 + x = 12$

11. $7 + 3$

6. twelve times a number

12. the quotient of 10 and a number

Simplify the expressions with the given value. Then, re-write the equivalent expressions as an equation.

Ex. $-4a - 3$ $a = 6$
 $-6a + 9$

$-4a - 3$ $-6a + 9$
 $-4(6) - 3$ $-6(6) + 9$
 $-24 - 3$ $-36 + 9$
 -25 -25

$-4a - 3 = -6a + 9$

13. $3(x + 2)$ $x = -1$
 $-5 - 2(x - 3)$

14. $4z - 6$ $z = 5$
 $z + 9$

15. $\frac{1}{3}(6y - 9)$ $y = 4$
 $-2y + 13$

Write = or \neq in the blank to make a true statement.

16. $3 \cdot 6 - 4 \underline{\hspace{1cm}} 3 \cdot (6 - 4)$

18. $4 \cdot 7 - 2 \cdot 10 \underline{\hspace{1cm}} 4(7 - 2) \cdot 10$

17. $4[6(2 + 3)] \underline{\hspace{1cm}} 125 - 5 \cdot 1$

19. $\frac{4 + 3 \cdot 6}{3 \cdot 2 + 5} \underline{\hspace{1cm}} \frac{12 - 2 \cdot 3}{2 \cdot 1 + 1}$

20. Is it possible to know whether or not this open sentence is true statement with only the information given? Why or why not? $-4a - 3 \underline{\hspace{1cm}} -6a + 9$

Determine if the given value makes the open sentence true or false. (An "open sentence" is an equation with a variable.)

Example: $a = 6$
 $-4a - 3 = -6a + 9$

$$\begin{aligned} -4a - 3 &= -6a + 9 \\ -4(6) - 3 &= -6(6) + 9 \\ -24 - 3 &= -36 + 9 \\ -25 &= -25 \end{aligned}$$

$-4a - 3 = -6a + 9$ is
TRUE when $a = 6$.

21. $x = -1$
 $3(x + 2) = -5 - 2(x - 3)$

22. $z = -5$
 $4z - 6 = z + 9$

23. $y = 4$
 $\frac{1}{3}(6y - 9) = -2y + 13$