



A *variable* is a symbol that is used to represent a quantity.

It's a letter or other symbol that stands for a number!

EXAMPLE

What number does the \square represent in the equation below?

$$40 + \square = 48.$$

$$40 + \boxed{8} = 48.$$

So, \square represents 8.



PRACTICE | What number does the \square represent in each equation below?

1. $9 + \square = 16.$

1. _____

2. $35 - \square = 20.$

2. _____

3. $80 + 20 = \square.$

3. _____

4. $\square - 9 = 31.$

4. _____

PRACTICE | What number does n represent in each equation below?

5. $30 + n = 130.$

5. $n =$ _____

6. $n + 5 = 35.$

6. $n =$ _____

7. $n - 3 = 67.$

7. $n =$ _____

8. $100 - n = 40.$

8. $n =$ _____



When we **evaluate** an expression that includes one or more variables, we replace each variable with a number.

Then, we find the value of the expression.

Remember to use the correct order of operations!

EXAMPLE

Evaluate the expression below when $m = 5$.

$$24 - m \times 2$$

Since $m = 5$, we replace the m in $24 - m \times 2$ with 5:

$$24 - 5 \times 2.$$

Then, we evaluate $24 - 5 \times 2$:

$$24 - 5 \times 2 = 24 - 10 = 14.$$

PRACTICE

Evaluate each expression below when $n = 6$.

9. $13 + n$

9. _____

10. $33 - n$

10. _____

11. $n \times 4$

11. _____

12. $2 \times 4 + n$

12. _____

PRACTICE

Evaluate each expression below when $r = 10$.

13. $r + 216$

13. _____

14. $152 + 9 - r$

14. _____

15. $122 \times r$

15. _____

16. $7 \times (r + 20)$

16. _____



EXAMPLE

Evaluate $16 - t$
when $t = 4$.

When $t = 4$, the expression
 $16 - t$ is equal to
 $16 - 4 = 12$.

PRACTICE

Evaluate $9 \times a + 3$ for each value of a .

17. $a = 9$

17. _____

18. $a = 4$

18. _____

19. $a = 20$

19. _____

PRACTICE

Evaluate $300 - k \times 2$ for each value of k .

20. $k = 25$

20. _____

21. $k = 100$

21. _____

22. $k = 60$

22. _____

PRACTICE

Evaluate $3 \times (d + 4)$ for each value of d .

23. $d = 6$

23. _____

24. $d = 10$

24. _____

25. $d = 17$

25. _____



When you **simplify** an expression, you write it in a way that means the same thing but is easier to use.

EXAMPLE

Simplify the expression below.

$$y + 20 - 6$$

Adding 20 then subtracting 6 is the same as adding $20 - 6 = 14$. So, we have

$$y + 20 - 6 = y + 14.$$

We cannot simplify this expression further.

Our simplified expression is **$y + 14$** .

PRACTICE

Simplify each expression below.

26. We know that $9+9+9+9=4 \times 9$, and $4+4+4+4+4+4+4=7 \times 4$. Simplify $n+n+n+n+n+n$. 26. _____
27. We know that $7-7=0$ and $11-11=0$. Simplify $n-n$. 27. _____
28. We know that $6+5-5=6$ and $9+3-3=9$. Simplify $n+5-5$. 28. _____
29. We know that $7+4-4=7$ and $8+2-2=8$. Simplify $17+n-n$. 29. _____

PRACTICE | Simplify each expression below.

30. $d+11+14$ 30. _____

31. $17+p+2$ 31. _____

32. $13-12+f$ 32. _____

33. $5+k-k$ 33. _____

34. $j-20+20$ 34. _____

35. $w+20-w$ 35. _____

36. $13+g-13-g$ 36. _____



37. $t+t-t+t+t-t-t$ 37. _____

