



Evaluating Expressions

Evaluating an expression means finding its value. Your solution will most likely be a number. For expressions that contain variables, you will probably be given values for those variables, which you will then substitute into the equation (or **plug in**), and then evaluate the arithmetic expression that results.

Remember to follow order of operations: Start with any expressions in brackets, then exponents, then multiplication and division from left to right, then addition and subtraction from left to right.

Example 1: Evaluate $2x - 3y + z$ when $x = 3$, $y = -4$ and $z = 5$.

$$\begin{aligned}\text{Solution: } 2x - 3y + z &= 2(3) - 3(-4) + (5) \\ &= 6 + 12 + 5 \\ &= 23\end{aligned}$$

Example 2: Evaluate $(x - 3)^2 + 3(y + 2)^2 - 3$ when $x = 4$ and $y = 8$.

$$\begin{aligned}\text{Solution: } (x - 3)^2 + 3(y + 2)^2 - 3 &= (4 - 3)^2 + 3(8 + 2)^2 - 3 \\ &= (1)^2 + 3(10)^2 - 3 \\ &= 1 + 3 = 10 - 3 \\ &= 1 + 48 - 3 \\ &= 46\end{aligned}$$

EXERCISES

A. Evaluate:

1) $2x + 3y$ when $x = 1$ and $y = -1$

2) $3x - 5y$ when $x = 0$ and $y = -3$

3) $2x^2 - 3(y + 1)$ when $x = -2$ and $y = 3$