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 $z = 5$.

Solution:
$$2x - 3y + z = 2(3) - 3(-4) + (5)$$
$$= 6 + 12 + 5$$
$$= 23$$

Example 2:   Evaluate $(x - 3)^2 + 3(y + 2)^2 - 3$ when $x = 4$ and $y = 6$.

Solution:
$$(x - 3)^2 + 3(y + 2)^2 - 3 = ((4) - 3)^2 + 3((6) + 2)^2 - 3$$
$$= (1)^2 + 3(4)^2 - 3$$
$$= 1 + 3 \times 16 - 3$$
$$= 1 + 48 - 3$$
$$= 46$$

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 $y = 3$

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