

Algebra: Evaluating Expressions

To evaluate an Algebraic Expression:

Replace each variable by the value given.

Follow the Rules of Order to evaluate the expression.

Example:

If $a = 7$ and $b = 3$,	evaluate: $a + b$	Replaced values: $7 + 3$	Result: 10
	evaluate: $a - b$	Replaced values: $7 - 3$	Result: 4
	evaluate: $-a + b$	Replaced values: $-7 + 3$	Result: -4
	evaluate: $-a(b)$	Replaced values: $-7(3)$	Result: -21

When the replacement value is a negative integer, it is wise to use ().

If $a = -7$ and $b = 3$,	evaluate: $a + b$	Replaced values: $(-7) + 3$	Result: -4
	evaluate: $-a + b$	Replaced values: $-(-7) + 3$	Result: 10

If $a = -7$ and $b = -3$,	evaluate: $a + b$	Replaced values: $(-7) + (-3)$	Result: -10
	evaluate: $-a - b$	Replaced values: $-(-7) - (-3)$	Result: 10

Be careful when working with exponents.

If $a = 7$ and $b = -3$,	evaluate: $a^2 + b^2$	Replaced values: $7^2 + (-3)^2$	Result: 58
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If $a = 7$ and $b = -3$,	evaluate: $-a^2 - b^2$	Replaced values: $-7^2 - (-3)^2$	Result: -58
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TRY:

Evaluate the following expressions if $a = 4$, $b = 3$, $c = -2$, and $d = -4$

$$-c^2$$

$$-d(-c)$$

$$-(d - c)^3$$

$$4(2a - c)$$

$$5(3b + d)$$

$$c^2 + a^2$$

$$\frac{3a + 2b}{6}$$

$$\frac{4a + 3c}{2d + c}$$

$$(c - a)(d + b)$$