

Evaluating Expressions

Evaluating Algebraic Expressions

To evaluate an algebraic expression, substitute the variable with a number and perform the operation(s) in the expression.

Example: Evaluate $x + 7$, for $x = 12$

$x + 7$ substitute the x with the given value, 12
 $12 + 7$ perform the operation (add)
 19

Which expression has the greatest value?

$x = 9$ $y = -3$

$x - y$	xy	$\frac{x}{y}$
$9 - (-3)$	$9(-3)$	$\frac{9}{-3} = -3$
$9 + 3 = 12$	-27	
$y - x$	$x + y$	$\frac{y}{x}$
$-3 - 9$	$9 + (-3)$	$-\frac{3}{9} = -\frac{1}{3}$
-12	$9 - 3 = 6$	

Evaluate the expression if $m = -4$ and $z = 9$.

$z - m$

$9 - (-4)$
 $9 + 4 = 13$

Evaluate the expression if $m = 0$ and $z = -7$.

$4m - z$

$4(0) - (-7)$
 $0 + 7$
 7

Evaluate the expression if $m = -2$ and $z = -5$.

$2z + m$

$2(-5) + (-2)$
 $-10 - 2$
 -12

Evaluate the expression if $x = 21$, $y = 3$, and $z = -1$
 $2y + (z - x \div 3)$

$2 \cdot y + (z - x \div 3)$
 $= 2 \cdot 3 + (-1 - 21 \div 3)$ Replace x with 21, y with 3, and z with -1.
 $= 2 \cdot 3 + (-1 - 7)$
 $= 2 \cdot 3 + (-8)$
 $= 6 - 8$
 $= -2$

Evaluate the expression if $g = 4$, $j = -8$, and $k = 12$
 $gk \div j + 3$

$4 \cdot 12 \div (-8) + 3$
 $48 \div -8$
 $-6 + 3$
 -3

Evaluating with Exponents

$x = 3$

x^2	$(x)^2$	$(-x)^2$	$-(x)^2$
3^2	$(3)^2$	$(-3)^2$	$-(3)^2$
$3 \cdot 3 = 9$	$3 \cdot 3 = 9$	$-3 \cdot -3 = 9$	$3 \cdot 3 = -9$

Spin the wheel to find a value for a , b , and c .

$a = 2$ $b = 3$ $c =$
 $a(6 \div 2) + -(b)^2$

$2(6 \div 2) + -(3)^2$
 $2(3) - 9$
 $6 - 9 = -3$



Spin the wheel to find a value for a , b , and c .

$a = 0$ $b = 3$ $c = 3$
 $-c + (b + 2)(-a + 3)$

$-(3) + (3 + 2)(-0 + 3)$
 $3 + (5)(3)$
 $3 + 15 = 18$



Warm up 9/20

a) $(-1)^{77} = -1$
 $-6m + 9$
 b) $-(6m - 9)$