

Example 1

Write a variable expression for the situation:

four more than Alyssa's flowers

Variable: Let a be the number of flowers Alyssa has.

Expression: $\underbrace{\text{four}}_4 \text{ more than } \underbrace{\text{Alyssa's Flowers}}_a$

The expression is: $4 + a$

Example 2

Write a variable expression for the phrase:

three times a number decreased by five

Variable: Let n be the number.

Expression: $\underbrace{\text{three}}_3 \text{ times } \underbrace{\text{a number}}_n \text{ decreased by } \underbrace{\text{five}}_5$

Decreased by
means subtract.

The expression is: $3n - 5$

Evaluating Expressions

To evaluate an expression you replace the variables with a given value and then use order of operations to simplify the expression.

Example 3

Evaluate $3x + 6$ if $x = 4$.

The sentence $x = 4$ gives you a value for the variable. The 3 and the x are written side by side indicating multiplication.

Write the expression:	$3x + 6$
Replace the x with 4:	$= 3(4) + 6$
Simplify using order of operations:	$= 12 + 6$
	$= \mathbf{18}$

Example 4

Evaluate $7(m - n) + 3m$ if $m = 12$ and $n = 4$.

Write the expression:	$7(m - n) + 3m$
Replace m with 12 and n with 4:	$= 7((12) - (4)) + 3(12)$
Simplify using order of operations:	$= 7(8) + 3(12)$
	$= 56 + 36$
	$= \mathbf{92}$