

I can write and evaluate expressions.

To Evaluate an Expression:

- 1) Simplify the expression and plug in a value for each variable
- 2) Simply the expression

Examples:

1) Evaluate $3x^2 + 4 + y$ when...
 $x = -2$ and $y = 5$

Rewrite: $3(-2)^2 + 4 + 5$

Simplify: 21

2) Evaluate $4a^2 + 3a + 1$ when $a = -2$.

Rewrite: $4(-2)^2 + 3(-2) + 1$

Simplify: 11

3) Evaluate $2a^2 + 3b + c$ when...
 $a = -3$, $b = 4$ and $c = 5$

Rewrite: $2(-3)^2 + 3(4) + 5$

Simplify: 35

4) Evaluate $6(x - 2)^2$ for $x = -1$.

Rewrite: $6(-1-2)^2$

Simplify: 54

5) What is the value of the expression below when $n = 12$ and $p = -2$?

Rewrite: $\frac{n}{3} - 1 + 5p - 2n + p^2$ $\frac{(12)}{3} - 1 + 5(-2) - 2(12) + (-2)^2$

Simplify: -27 $4 - 1 - 10 - 24 + 4$

Write the Expression and Evaluate:

1) To get into the county fair, Patricia must pay a \$5 entrance fee and \$2 for each ride. Write an expression to represent the total Patricia spends at the fair.

Write the expression $5 + 2r$

If Patricia went on 10 rides, how much did she spend?

Evaluate $5 + 2(10) = \$25$

2) Elaina and her friends went out to dinner and decided to split the bill evenly. The cost for dinner was \$56.75. If there were n number of people out to dinner, how much did each person pay?

Write the expression $56.75 \div n$

If 8 people were out to dinner, how much did each person pay?

Evaluate $56.75 \div (8) = \$7.09$

Test Example:

3) A landscaper charges \$30 for each job plus an additional \$20 for each hour worked.

a.) Write an expression to represent the total cost of a landscape job. Explain what the variable used in the expression represents.

$$30j + 20h$$

$j = \text{jobs}$
 $h = \text{hours}$

b.) Explain how you identified the operation used in the expression.

"each"

c.) If the landscaper completes 10 jobs, totaling 40 hours, how much does he earn?

$$30(10) + 20(40) = \$1,400$$

Writing in Word Form:

Write the following in word form:

a.) $3x - 5$ 5 less than the product of 3 and x

Then evaluate for $x = -2$ -11

$$3(-2) - 5$$

b.) $6(x + 7)$ The product of 6 and the sum of x and 7

Then evaluate for $x = 3$ 60

$$6((3) + 7)$$

c.) $\frac{x^2}{-10}$ The quotient of x^2 and -10

Then evaluate for $x = -5$ -2.5

$$\frac{(-5)^2}{-10}$$

d.) Write a WORD PROBLEM for the following expression:

$$2x + 4$$

Jim goes to the dance and pays \$4 at the door along with \$2 for each drink. How much does he pay if he buys 4 drinks?

Then evaluate if $x = 4$

$$2(4) + 4 = \$12$$