WEB PROGRAMMING FUNDAMENTALS
web design and development
full sail university

wpf

Instructional Assignment: Expressions

OVERVIEW:

Write an expression for each of the following word problems in JavaScript.

OBJECTIVES:

Successful completion of this activity will show that you can:

- Determine the appropriate operators and employ them to solve the problem.
- Implement variables and constants.
- Recognize when to use parenthesis for the order of operations.
- Translate and summarize code with comments.

CRITERIA:

For each solution you will need the following:

- Label the section of code appropriately with comments
- Write the givens as appropriately named variables or constants.
- Declare a variable for your result.
- Use the variables to calculate the result (NOT the literal values or numbers)
- Calculate the result using the variables in an expression
- Assign the calculation to the resulting variable.
- Trace the result to the console using console.log(Remember to include units like "feet" and "slices of pizza")
- Comment every line of code (describe what each line is doing in English)

GETTING STARTED:

- Create a folder for this assignment in your working set of files for GitHub and name it **Day3LabExpressions**.
- Create a comment at the top of your document with your name, date, class and section and assignment name.

TURNING IT IN:

- Double check that you've commented your code! (You can't comment too much!)
- Commit and Sync To GitHub

Problem: Calculate the area of a rectangle given the width and height of the rectangle.

Givens:

- The width of the rectangle
- The height of the rectangle.

Result Variable:

- The area of the rectangle.

Result Trace:

- "The area of the rectangle is **x**";

Example problem as it should appear in your code.

```
//Calculate the area of a rectangle
var width = 6;
var height = 4.5;

//multiply width * height
var area = width * height;
//Output Area
console.log("The area of the rectangle is " + area );
```

Problems :

Slice of Pie part 1

A bunch of students are having a party and somebody ordered pizza. Create an expression that calculates how much pizza each partygoer will get at the party. (Assume all pizzas have the same number of slices and that the person dividing the pizza is really precise, so this can be a decimal, like 3.52 slices, etc.)

Given:
  - Number of slices per pizza
  - Number of people at the party
  - Number of pizzas ordered.

Result Variables:
  - Number of slices per person.

Result Format:
  - "Each person ate **X** slices of pizza at the party."

Slice of Pie part II

At the pizza party Sparky, the host's dog is excited, because he gets the leftover pizza after the slices have been divided up evenly among the guests. Assume guests get *whole* slices, how many whole slices will Sparky feast on?

Example data set: 10 people, 4 pizzas and 8 slices per pizza will mean each person eats 3 slices and Sparky gets 2 slices. (Note that this is an example, your code should work and give me the accurate results no matter what numbers I put in for those given variables.)

Given:
  - Don't make new given variables/constants for this. Instead use the givens you set up for Slice of Pie I.

Result Variables:
  - Number of slices Sparky gets to eat.

Result Format:
  - "Sparky got **X** slices of pizza."

Problems Continued:

Average shopping bill

You are budgeting your money for the year and must calculate your average weekly grocery shopping spending over the past five weeks. Calculate the average amount spent on groceries.

Givens:
- 5 weekly grocery bills.

Result Variable:
- Total amount spent on groceries.
- Average weekly grocery spending.

Result Format:
- "You have spent a total of $**X** on groceries over 5 weeks. That is an average of $**X** per week"

Discounts

Calculate the discounted price for an item. Create an expression that will calculate the discounted price *with and without* sales tax. (It is acceptable for the result to have more than two digits after the decimal. $345.896 for example.)

Givens:
- Original price
- Discount percentage
- Description of item
- Sales tax percentage

Result Variables:
- Price of the item with tax
- Price of the item without tax

Result Format:
- "Your **X** was originally $**X**, but after a **X**% discount, it is now $**X** without tax, and $**X** with tax."