PROJECTS FOR: Conditional Expressions – ifs

1. Fast Food:

Write a simple program that takes in orders for a fast food store. The store only sells hamburgers and cheesburgers.

Ask the customer for their order. You enter the number of the item they want and then the item.
For example if they want 2 hamburgers, enter 2 h
The program should ask for an order 2 times (1 for the hamburgers and 1 for the cheeseburgers) If they do not want one of the products have them enter 0 (0 c).

After they complete their order, display the total cost and sales tax
Then ask for a payment
Take the payment and display their change

Next item (0 to quit) ==> 2 h 2 hamburgers
Next item (0 to quit) ==> 1 c 2 cheesburgers

Total: 3.77
Sales tax: 0.19
Total due: 3.96
Please Enter Customer Payment: 5.00
Customer Change: 1.04

The prices are as follows:

Hamburger 1.19
Cheeseburger is hamburber price plus .20
Tax rate is 5 percent (.05)

2. Simple Calculator

Write a program that asks the user for 2 numbers followed by an operation to perform. Calculate the result and display it.

The user must be able to add, subtract, multiply, divide and modulus

Example:

Please enter your first number: 5
Please enter your second number: 10
Please enter the operation to perform: *

Answer: 50

3. Modify MATH "Right Triangle"

Change the program to allow the user to enter ANY one of the Triangle's side (length) and EITHER the alpha or beta angle.

Perform the same calculations as before. The following is a repeat of the original project requirements:

Add a function that calculates the length of sides and angels for a given Right Triangle

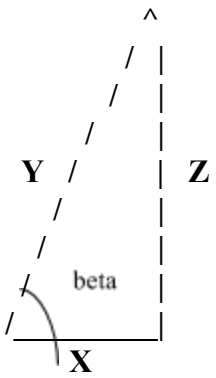
Given the length of one side, the opposite side, and the length of one angle, beta, calculate and display the remaining angle, alpha, along with the remaining two sides, adjacent and hypotenuse

For extra credit, prove your results by applying them to the Pythagorean Theorem (H^2 = A^2 + O^2)
If the numbers ARE CLOSE, then your answers are correct

Be sure to display all answers to the user

Ask the user for the length of any of the sides
Then ask for the angle of alpha or beta

Then calculate and display the results
For example:



User enters:

Beta = 36
Z = 4

You calculate:

Alpha = 54
Y = 6.81
X = 5.51

Proof:

X^2 + Z^2 = Y^2
46.3601 aprox 46.3761

4. Clean Products Corporation

Write a program that computes the GROSS PAY for an employee of the clean products corporation. The company produces 3 products: Floor Wax, Soap and Window Cleaner.

Supervisors earn a monthly commission of 7 percent of sales

Representatives earn a monthly commission of 5 percent of sales

Bonuses of $100 are paid to Supervisors whose commissions EXCEED $300
And to Representatives whose commissions EXCEED $200

Input into the program is in the following form:

S 18 15 10

First input is for Supervisors or Representatives
The next 3 numbers are number of units of each product sold (wax, soap,cleaner)

Declare constants for the prices of these items and for the commission rates.
Wax = 13.95
Soap = 17.95
Window cleaner = 29.95

Allow for the input of a salesman or a representatives sales, then compute:

- **their total sales for each product**
- **their grand total in sales**
- **their commission amount**
- **their bonus, if any**
- **their GROSS PAY**

5. Gas – N – Clean

The Gas-N- Clean sells gasoline and has a car wash.

Fees for the car wash are as follows:
1.25 with a gasoline purchase of 10.00 or more
3.00 otherwise

There are 3 kinds of gasoline available:
Regular at 1.149 per galon
Plus at 1.199 per gallon
Super at 1.289 per gallon

Allow the program to accept a sale from the customer as follows:

Enter the number of Gallons of Gas: 10.2
Enter the Type of Gas (or N for NONE): R
Enter Y to obtain a wash or N for no wash: Y

Produce the following totals:
Total price of the gas
Cost of Car Wash
Total Amount Due

6. Holidays

Create a program that will calculate and display the following dates for a given year:

Labor Day (first Monday in september)

Memorial Day (last Monday in may)

Thanksgiving (4th Thursday in November)

Election Day (first Tuesday after the first Monday in November).

You can leverage the functions and definitions from the weekday.java (days in the week) program.

The program needs to prompt the user for a desired year, then calculate and display the holiday names and their respective dates.