MATH EXPRESSIONS

Assignment # 5

JAVASCRIPT

1. Write a program that take two numbers & add them in a new variable. Show the result in your browser.

```
//ASSIGNMENT
var num1=+prompt("Enter first number:")
var num2=+prompt("Enter second number:")
var num3=num1+num2
document.write("Sum of ",num1," and ",num2," is ",num3)
```

Sum of 3 and 5 is 8

2. Repeat task1 for subtraction, multiplication, division & modulus.

```
//ASSIGNMENT
var num1=+prompt("Enter first number:")
var num2=+prompt("Enter second number:")
var num3=num1-num2
document.write("Subtraction of  ",num1," and ",num2," is ",num3)
```

```
//ASSIGNMENT
var num1=+prompt("Enter first number:")
var num2=+prompt("Enter second number:")
var num3=num1*num2
document.write("Multiplication of  ",num1," and ",num2," is ",num3)
```

```
//ASSIGNMENT
var num1=+prompt("Enter first number:")
var num2=+prompt("Enter second number:")
var num3=num1/num2
document.write("Division of  ",num1," and ",num2," is ",num3)
```

```
//ASSIGNMENT
var num1=+prompt("Enter first number:")
var num2=+prompt("Enter second number:")
var num3=num1%num2
document.write("Modulus of  ",num1," and ",num2," is ",num3)
```

3. Do the following using JS Mathematic Expressions
   a. Declare a variable.
   b. Show the value of variable in your browser like “Value after variable declaration is: ??”.
   c. Initialize the variable with some number.
   d. Show the value of variable in your browser like “Initial value: 5”.
   e. Increment the variable.
   f. Show the value of variable in your browser like “Value after increment is: 6”.
   g. Add 7 to the variable.
   h. Show the value of variable in your browser like “Value

after addition is: 13".
i. Decrement the variable.
j. Show the value of variable in your browser like "Value after decrement is: 12".
k. Show the remainder after dividing the variable's value by 3.
l. Output : "The remainder is : 0".

```
//ASSIGNMENT
var num
document.write("Value after variable declaration is: ",num)
num=5;
document.write("<br>Initial value: ",num)
num++;
document.write("<br>Value after increment is: ",num)
num=num+7;
document.write("<br>Value after addition is: ",num)
num--;
document.write("<br>Value after decrement is: ",num)
num=num%3;
document.write("<br>The remainder is : ",num)
```

Value after variable declaration is undefined
Initial value: 5
Value after increment is: 6
Value after addition is: 13
Value after decrement is: 12
The remainder is: 0

4. Cost of one movie ticket is 600 PKR. Write a script to store
   ticket price in a variable & calculate the cost of buying 5 tickets
   to a movie. Example output:

```
06
07  //ASSIGNMENT
08  var t_Price=600;
09  document.write("Total cost to buy 5 tickets to a movie is ",t_Price*5,"PKR")
10
```

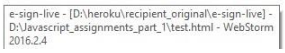
Total cost to buy 5 tickets to a movie is 3000PKR

---

5. Write a script to display multiplication table of any number in your browser. E.g

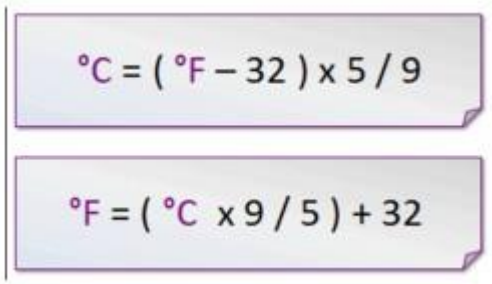
```
//ASSIGNMENT
var tableNum=+prompt("Enter the number whose table you want: ")
document.write("Table of ",tableNum,"<br>")
for (let index = 1; index <= 10; index++) {
document.write(tableNum," * ",index," = ",tableNum*index,"<br>")
}
```

Table of 4
4x1=4
4x2=8
4x3=12
4x4=16
4x5=20
4x6=24
4x7=28
4x8=32
4x9=36
4x10=40



6. **The Temperature Converter:** It's hot out! Let's make a converter based on the steps here.
   a. Store a Celsius temperature into a variable.
   b. Convert it to Fahrenheit & output "NNºC is NNºF".
   c. Now store a Fahrenheit temperature into a variable.
   d. Convert it to Celsius & output "NNºF is NNºC".

Conversion Formulae:




```
//ASSIGNMENT
var celciusTemp=+prompt("Enter the temperature in Celcius: ")
var fahrenTemp=+prompt("Enter the temperature in Fahrenhiet: ")
var celTOfah=(celciusTemp*(9/5)+32);
var fahTOcel=(fahrenTemp-32)*(5/9);
document.write(celciusTemp,"oC is ",celTOfah,"oF <br>")
document.write(fahrenTemp,"oF is ",fahTOcel,"oC")
```

25^{0}C is 77ºF
70^{0}F is 21.11111111111111ºC

7. Write a program to implement checkout process of a shopping cart system for an e-commerce website. Store the following in variable

   Price of item 1
   a. Price of item 2
   b. Ordered quantity of item 1
   c. Ordered Quantity of item 2
   d. Shipping charges

Compute the total cost & show the receipt in your browser.

```
//ASSIGNMENT
document.write("<h1>Shopping Cart</h1><br><br><br>")
var p_Item1=650;
var p_Item2=100;
var q_Item1=+prompt("Enter quantity of Item 1: ")
var q_Item2=+prompt("Enter quantity of Item 2: ")
var shipcharge=100;
var totalCost=(p_Item1*q_Item1)+(p_Item2*q_Item2)+shipcharge;
document.write("Price of item 1 is : ",p_Item1,"<br>")
document.write("Quantity of item 1 is : ",q_Item1,"<br>")
document.write("Price of item 2 is : ",p_Item2,"<br>")
document.write("Quantity of item 2 is : ",q_Item2,"<br>")
document.write("Shipping Charges :",shipcharge,"<br>")
document.write("<br>Total cost of your order is :",totalCost)
```

Shopping Cart

Price of item 1 is 650
Quantity of item 1 is 3
Price of item 2 is 100
Quantity of item 2 is 7
Shipping Charges 100

Total cost of your order is 2750

8. Store total marks & marks obtained by a student in 2 variables. Compute the percentage & show the result in your browser

```
//ASSIGNMENT
var totalMarks=+prompt("Enter the total marks: ")
var MarksObtained=+prompt("Enter the Obtained Marks: ")
var percent=(MarksObtained/totalMarks)*100
document.write("<h1>Marks Sheet</h1><br><br><br>")
document.write("Total marks: ",totalMarks,"<br>")
document.write("Marks Otained: ",MarksObtained,"<br>")
document.write("Percentage: ",percent,"%")
```

Marks Sheet

Total marks: 980
Marks obtained: 804
Percentage: 82.0408163265306%

9. Assume we have 10 US dollars & 25 Saudi Riyals. Write a script to convert the total currency to Pakistani Rupees. Perform all calculations in a single expression. (Exchange rates : **1 US Dollar = 104.80 Pakistani Rupee** and **1 Saudi Riyal = 28 Pakistani Rupee**)

```
//ASSIGNMENT
document.write("<h1>Currency in PKR</h1>")
var dollars=+prompt("Enter the amount of dollars: ")
var riyals=+prompt("Enter the amount of riyals: ")
var currencyINpkr=(dollars*104.80)+(riyals*28);
document.write("Total Currency in PKR : ",currencyINpkr)
```

Currency in PKR

Total Currency in PKR: 1748

10. Write a program to initialize a variable with some number and do arithmetic in following sequence:
    a. Add 5
    b. Multiply by 10
    c. Divide the result by 2
    Perform all calculations in a single expression

```
06
07  //ASSIGNMENT
08  var num=Math.round(Math.random()*100)
09  var result=((num+5)*10)/2
10  console.log(result);
11
```

11. **The Age Calculator:** Forgot how old someone is? Calculate it!
    a. Store the current year in a variable.
    b. Store their birth year in a variable.
    c. Calculate their 2 possible ages based on the stored values.

Output them to the screen like so: “They are either NN or NN years old”.

```
//ASSIGNMENT
document.write("<h1>Age Calculator</h1><br><br><br>")
var currYear=2023
var birthYear=+prompt("Enter your birth year:")
document.write("Current year is :"+currYear,"<br>")
document.write("BirthYear is :"+birthYear,"<br>")
document.write("You are either ",currYear-birthYear,"  or ",currYear-birthYear-1," years old")
```

Age Calculator

Current Year: 2016
Birth Year: 1992
Your Age is: 24

12. **The Geometrizer:** Calculate properties of a circle.
    a. Store a radius into a variable.

    a. Calculate the circumference based on the radius, and output "The circumference is NN".
    (Hint : Circumference of a circle = 2 π r , π = 3.142)
    Calculate the area based on the radius, and output "The area is NN". *(Hint : Area of a circle = π r^2, π = 3.142)*

```
//ASSIGNMENT
document.write("<h1>The Geometrizer</h1><br><br><br>")
var radius=+prompt("Enter radius of circle:")
document.write("Radius of a circle : "+radius,"<br>")
document.write("The circumference is : "+2*3.142*radius,"<br>")
document.write("The area is : "+3.142*radius*radius)
```

The Geometrizer

Radius of a circle: 20
The circumference is: 125.67999999999999
The area is: 1256.8

13. **The Lifetime Supply Calculator:** Ever wonder how much a "lifetime supply" of your favorite snack is? Wonder no more.
    a. Store your favorite snack into a variable
    b. Store your current age into a variable.
    c. Store a maximum age into a variable.
    d. Store an estimated amount per day (as a number).
    e. Calculate how many would you eat total for the rest of your life.

Output the result to the screen like so: "You will need NNNN to last you until the ripe old age of NN".

```
//ASSIGNMENT
document.write("<h1>The Lifetime Supply Calculator</h1><br><br><br>")
var favSnack=prompt("Enter your favourite snack:")
var currAge=+prompt("Enter your current age:")
var maxAge=+prompt("Enter the maximum age you aspect you will live:")
var prdayConsump=+prompt("Enter how many snack you eat per day:")
var totalconsump=(maxAge-currAge)*365.25*prdayConsump;
document.write("Favourite snack: "+favSnack,"<br>")
document.write("Current age: "+currAge,"<br>")
document.write("Estimated Maximum Age: "+maxAge,"<br>")
document.write("Amount of snacks per day: "+prdayConsump,"<br>")
document.write("You will need "+Math.round(totalconsump)+" chocolate chip to last you untill the ripe old age of "+maxAge)
```

The Lifetime Supply Calculator

Favourite Snack: chocolate chip
Current age: 15
Estimated Maximum Age: 65
Amount of snacks per day: 3
You will need 150 chocolate chip to last you until the ripe old age of 65