

ET-575 - Expressions - Practice Problems

1. Request two integers x and y from the console.
 - a) Print the result of regular division upon x and y to four decimal places.
 - b) Print the result of integer division upon x and y .

Output Example

```
Enter a numerator: 10
Enter a denominator: 3
Regular Division: 3.3333
Integer Division: 3
```

2. Calculate the following, then write a program to check your answers.

```
9 % 3 = ____
7 % 2 = ____
44 % 7 = ____
50 % 4 = ____
```

3. Given any integer as input, print a number between 0 and 10.

Output Example

```
Enter a value: 13
A value that is between 0 and 10: 2
```

4. Write a program using the mod function that given any integer as input will output a number between 30 and 34.

Output Example

```
Enter a value: 780
A value
that is between 30 and 34: 30
```

5. What are the possible output values for $x \% 6$?

6. If $x \% y == 0$, what can we say about x relative to y .

7. Negate the following statements. Write some code to verify your answer.

$x == y$: _____
 $x >= y$: _____
 $x < y$: _____

8. Request an integer value x and print the following:

- a) x incremented by 2
- b) the updated value of x decremented by 1

All math should occur within print statements.

Output Example

Enter a value for x : **10**
 X incremented by 2: 12
 X decremented by 1: 11

9. Copy the following code into a new program.

```
int x = 5, y = 6, z = 7;

cout << "Given x = " << x << ", y = " << y << ", z = " << z << endl;

cout << "X\t" << "Y\t" << "Z\t" << endl;
cout << "---\t" << "---\t" << "---\t" << endl;

cout << x << "\t" << y << "\t" << z << endl;
cout << x << "\t" << y << "\t" << z << endl;
cout << x << "\t" << y << "\t" << z << endl;
cout << x << "\t" << y << "\t" << z << endl;
cout << x << "\t" << y << "\t" << z << endl;
```

Verify that the code prints the following:

Given x = 5, y = 6, z = 7.

X	Y	Z
---	---	---
5	6	7
5	6	7
5	6	7
5	6	7
5	6	7

Using various operations identically modify the last five cout statements to print the following:

Given x = 5, y = 6, z = 7.

X	Y	Z
---	---	---
5	8	6
6	10	5
7	12	4
8	14	3
9	16	2