# Contents



## Warm-up Exercises

1. Write an explicit conversion from a double variable myDoubleVar to an int variable called myIntVar. You don't need to re-declare those variables. Assuming myDoubleVar's value is 5.89, what value would be stored in myIntVar?
2. Declare and initialize two integer variables, x and y. Choose any values you want. Then write necessary commands to display the result of following 3 mathematical operations: addition, multiplication, and remainder (modulo) of x and y.

EXAMPLES OF OUTPUT

x = 5 and y = 3

```
5 + 3 = 8
5 * 3 = 15
5 % 3 = 2
```

x = 4 and y = 2

```
4 + 2 = 6
4 * 2 = 8
4 % 2 = 0
```

1. Write a command that performs implicit conversion between two numeric datatypes. Then, write a command that performs explicit conversion between two numeric datatypes. Add a comment above both commands to clearly indicate which command is implicit and which one is explicit.

## Questions

1. Comment briefly on the type decimal and format C it can be used with in a C# code.
2. What can you learn from this UML class diagram?

| Account |
| --- |
| - name : string |

| Account |
| --- |
| + SetName(accountName : string)<br>+ GetName() : string |

1. Can conversion between two number types change value of a number? Provide an example case.
2. Assume you have an int variable named myAge whose value is 24. What would be displayed on the screen by the following? `Console.WriteLine($"{myAge * 2}");`
3. Give the values of a and b after the following four instructions have been executed.

```
int a, b;
a = 2;
b = a * 2 + 1;
a -= 1;
```

1. Give the values of c and d after the following four instructions have been executed.

```
int c = 3, d;
d = 2 + c;
c = d * 2;
d += 2;
```

1. Is there an error in the following code? Explain the error or give the value of b after the second statement is executed.

```
float a = 3.7f;
int b = (int)a;
```

1. Is there an error in the following code? Explain the error or give the value of b after the second statement is executed.

```
decimal a = 1.6M;
int b = (int)a + a;
```

1. If one of the operator's operand is of type float and the other is of type int, what will be the type of the result of the operation?
2. What is the return type of the operation 12.4 * 3?
3. Give the values of a and b after the following four instructions have been executed.

```
int a, b;
a = 4;
b = a * 3 + 1;
a /= 2;
```

1. There is an error in the following code, at the second line. Explain the error and how you could fix this using a cast operator, without changing the datatype of the `b` variable.

```
decimal a = 2.5M;
int b = a / 2;
```

1. What is the return type of the operation 12.4 * 3?

## Problems

1. Write down, on a piece of paper, a fully compilable program that initializes an int variable named `persons` with the value **5**, an int variable named `bottles` with the value **3**, and a double variable named `litersPerBottle` with the value **1.5**. Initialize a variable named `litersPerPerson` with the value resulting from a math expression calculating the number of liters that each person would receive if split equitably, and make sure that this variable is of the type which can properly store the resulting value. Write a statement that displays its value.

Place a delimited comment with your name and the date of writing at the top of the program.