Metropolitan State University

ICS 140 Computational Thinking with Programming

Class Exercise 3

**Lecture Section**

1. What is the difference between floating point division and integer division?

Floating point division divides numbers with decimals and will return a decimal number

Integer division will divide integer values and return only an integer

1. When dividing numbers, how do you find the remainder?

Use the modulus (%) operator

1. How do you write an expression for x to the power of y?

X\*\*Y

1. What happens when you use the int() function to convert a float to an integer?

It changes the data type to a floating-point number which will have a minimum of 1 decimal place

1. How do you break a long line into 2 separate lines that execute as one?

Using parenthesis to show the beginning and end or / to signify it is the same code

1. How do you insert a new line into a string of text?

/n

1. How do you change the default behavior of the print function that causes it to add a new line after each statement?

Sep = /n

1. What function can you use to change the way a number is formatted when printing it out?

The format() function

1. What is a magic number and why is it bad?

Magic numbers are numbers that crop up in code that have no immediate meaning attached. They are bad because they make the code harder to maintain, harder to understand (especially from a 3rd party),

1. How do you create a named constant in python?

USE ALL CAPITAL LETTERS

**Python Commands**

For the following questions, write the expected output:

1. print(3 / 2) = 1.5
2. print(7 // 3) = 2
3. print(3 % 2) = 1
4. print(3 + 4 \* 2) = 11
5. print((3 + 2) \* 5) = 25
6. print(3 + 4\*\*2 % 3) = 4
7. print(format(1234 \* 10, ',d')) = 12,340
8. print(format(1234 / 10, ‘.2f’)) = 123.40
9. print(format(123467, ',.2f')) = 123,467.00
10. print(format(.75,'.0%')) = 75%

**Programming Exercise**

For the following exercise, please list out some test cases and paste the code into this document.

Create a program that calculates the miles per gallon (MPG) efficiency of a vehicle. Prompt the user to enter the Miles driven and gallons of gas used. Print out the MPG as a float to 3 decimal places.

**Python Code**

