CPSC 231: Extra midterm review questions

Multiple choice questions

1. The UNIX command _____ could be used to see the contents of a file.
   a) cd
   b) ls
   c) more
   d) see
   e) None of the above commands would allow you to view a file.

2. In terms of a Python program which of the following is true about the variable 'num' in the program below?

   ```
   num = 3.14
   ```

   a) num is a floating point variable
   b) num is an integer variable
   c) num is a real number variable
   d) num is a string variable
   e) The type of information associated with variable num cannot be determined solely from the above program

3. What will be the output of the following program?
   ```
   name = input ("Type in your name: ")
   print("Name:", name)
   ```

   a. Name name
   b. Name: name
   c. Name: James Tam
   d. Name: James Bond
   e. None of the above selections correctly and completely characterize the output

4. Which operator is used for finding the remainder of a division operation?
   a) a. *
   b) %
   c) exp()
   d) exponent()
   e) None of the above

How many times will the loops in Question 5 - 7 execute

5.

```
i = 1
while (i <= 7):
    print(i)
j = 11
```

   a) 9
   b) 10
   c) 11
   d) This loop will never execute
   e) This is an endless loop

6.

```
for i in range (0, 13, 3):
    print (i)
```

   a) 4
   b) 5
   c) 6
   d) 13
   e) 14

7.

```
i = 1
while (i < 7):
    print(i)
    i = i + 1
```

   a) 0
   b) 1
   c) 6
   d) 7
   e) This is an endless loop

Short answer 1:

In the space provided you are to specify the output of the following program.

```
print("t\t\\n")
print('...')
```

<< Start answer space >>

<< End answer space >>

Question 2 (if material was covered in lecture)

What's the output of the following program?

```
x = "sheen"
y = 51 z =
1/3
print("%d\nd\t%s" %(-7,"miley"))
print("\\%6s\'-4%-3d%.2f" %(x,y,z))
```

<< Write your answer here >>

<< End of answer space >>

Question 3:

Canada employs a 'progressive tax' system (primary source: http://www.craarc.gc.ca/tx/ndvdls/fq/txrts-eng.html). The following is a modification of the actual tax system. If $10,822 or less then you pay no income tax. Income over $10,822 up to and including 43,561 is taxed at 15%. For income more than $43,561, but not more than $87,123, the tax rate is 22%. For income more than $87,123, but not more than $135,054, the tax rate is 26%. For income is more than $135,054, the tax rate is 29%. For the purposes of this question a person will only be classified into one of the above tax brackets e.g., a person earning $100,000 pays a 26% tax rate. Modify the program below so that it calculates and displays: the amount of tax owed and income after taxes have been deducted.

```
grossIncome = 0
taxesOwed = 0
incomeAfterTaxes = 0
grossIncome = int(input("Enter your yearly income: "))
```
(Write you answer on the next page; on an actual exam you could use the above space for rough work).

```
    << Write your answer here >>
```

```
    << End of answer space >>

    incomeAfterTaxes = grossIncome - taxesOwed
    print("Gross income $%d" %grossIncome)
    print("<Less tax $%d>" %taxesOwed)
    print("Income after taxes $%d" %incomeAfterTaxes)
```

Question 5:

(From the University of Calgary calendar 2012 - 2013 Page 338). The prerequisites for CPSC 331 are the following: "One of Computer Science 219, 233, 235 [JT: the calendar includes Computer Engineering 339 but for simplicity you can exclude it from this question] and one of Mathematics 271 or 273". Modify the following program so that the message "pre-requisites met" appears if the student has taken the appropriate course and the message and the message pre-requisites not met" otherwise. You can assume that the course information will come in as a string: Computer Science courses will be abbreviated as CPSC, math courses abbreviated as MATH. The format will be as follows

`<Course name><Space><Course number>` e.g. `CPSC 231`

```
cpscCourseTaken = input("What Computer course have you taken: ")
mathCourseTaken = input("What Math course have you taken: ")
```

Write you answer on the next page, on an actual exam you could use the above space for rough work).

<< Write your answer here >>