Turn off cell phones, pagers, and anything that makes a noise.

Nothing is allowed on the desk top but the test, pens, pencils, erasers, and drinks.

Do not ask a question in a way that gives away the answer to the test question.

In any code that you write on this test, you do not have to write comments or print statements that explain what the program does. Just write enough code to do what is asked.

If the code requires import statements, you must write the import statement.

Use underscores to represent spaces when writing answer (i.e., __ represents two spaces)

1. (40 points) If A = 4 and B = 7, show what each of the following statements, or pair of statements produces. Indicate a space by an underscore (so __ represents two spaces).

a. print("A = ", A, B)
   \[ A_\_ = _4_7 \]

b. print("A=", A, end = "\$")
   print("B=", B)
   \[ A = _4 \_6 = _7 \]

c. print("Result = ", A*B)
   print(end="\n")
   print('No more')
   \[ Result = _28 \]
   \[ No\_More \]

d. print("A" + str(A), sep = "?")
   \[ A_2_4 \]
2. (24 points) Describe the following stages of the programming process. You may use examples to help answer the questions.

   a. Problem description/analysis
      - determine the problem/issue to be handled
      - describe exactly what the program will do in natural language

   b. Test/debug
      - run your program and see if it works as expected
      - create an exhaustive set of test cases and try them on the program

   c. Maintenance
      - longest part of the software lifecycle
      - continue updating & supporting the software after release

3. (12 points) Are the following valid python variable names?

   a. %x  no

   b. x yz  not valid for one variable name
      - would be valid as two different names (x for one name, yz for another)

   c. x8j  no

   d. 8yes  yes

   e. eight  yes

   f. _100test  yes
4. (14 points) What are the data types (int or str) of the following expressions:

a. ‘XYZ’   str

b. “23”    str

c. “18.3”  str

d. eval("23")  int

e. 23      int

f. eval("3 ** 2")  str

g. 3 - 2 * 3  int

5. (10 points) Write a program that prompts for your name (name), current year (year), and date of birth (dob). Print out name, year, dob, and year-dob.

```python
name = input("Name: ")
year = eval(input("Current year: ")
dob = eval(input("Year of birth: ")

print("Name: ", name)
print("Current year: ", year)
print("Year of birth: ", dob)
print("Your approximate age: ", year - dob)
```