Sample Midterm #2 Answers

1. Evaluate each expression. If any cannot be evaluated, say why.
   a. $3 + 5.0$
   b. "hello" + "goodbye"
   c. $7 * True$
   d. $6 / "spam"
   e. True and (not False or True)
   f. "monty" <= "python"

   Answer:
   a. 8.0
   b. "hellogoodbye"
   c. 7
   d. A string cannot divide an integer, so this produces a TypeError
   e. True
   f. True

2. Convert the following into Python:
   a. “hello” follows “goodbye” in the character ordering of the computer
   b. The value of the variable answer is true or the value of the variable y is less than 126
   c. The function gleep is called with an argument of –21

   Answer:
   a. "hello" > "goodbye"
   b. answer or (y < 126)
   c. gleep(-21)

3. Convert the following into a “for” loop:

   i = 1
   while i < 10:
       print i * "x"
   i += 3

   Answer:
   for i in range(1, 10, 3):
       print i * "x"

4. What does the following function do when given a string as the first argument and a string containing only one character as the second argument?

   def f(s, c):
       i = 0
       while i < len(s):
           if s[i] == c:
               return i
       i += 1
   return -1

   Answer: This returns the index of the first occurrence of the character c in the string s, or –1 if it does not occur in the string. This is the same as the function string.find(w, c).

5. In the following program:
try:
    x = input("Enter a number: ");
    y = 1 / x;
except ZeroDivisionError:
    print "Nice try: you divided by 0"
except SyntaxError:
    print "What on earth did you type?"
except NameError:
    print "I have no clue what that name refers to"
except TypeError:
    print "I don't handle conversions well today"
else:
    print "The reciprocal of", x, "is", y;

Please show five different inputs, each of which will execute a different print statement in the program.

**Answer:** In the following, do not type the surrounding double quotes.

- The input “0” produces “Nice try: you divided by 0”
- The input “I don't know” produces “What on earth did you type?”
- The input “hello” produces “I have no clue what that name refers to”
- The input “'hello'” (note the single quotes) produces “I don't handle conversions well today”
- The input “5.0” produces “The reciprocal of 5.0 is 0.2”

6. What does the following program print?

def a(hi):
    hi = 7
    return hi + 3

def main():
    hi = 8
    lo = 3
    print hi, lo
    lo = a(hi)
    print hi, lo

main()

**Answer:**

8 3
8 10