

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
```