## 2.10 Review Questions

1. What does Python print as a result of this statement:

```
print(7 + 23)
```

   (a) `7 + 23`

   (b) `7 + 23 = 30`

(c) `30`

(d) This produces an error.

2. Which of the following *are* valid variable names?

(a) `_1_2_3_`

(b) `ms.NET`

(c) `WoW`

(d) `green-day`

(e) `big!fish`

(f) `500_days_of_summer`

3. Which of the following *are* valid identifiers?

(a) `a1b2c`

(b) `1a2b3`

(c) `a_b_c`

(d) `_a_b_`

(e) `a-b-c`

(f) `-a-b-`

(g) `aBcDe`

(h) `a.b.c`

4. Suppose the variable `x` has the value `5` and `y` has the value `10`. After executing these statements:

```
x = y
y = x
```

what will the values of `x` and `y` be, respectively?

(a) `5` and `10`

(b) `10` and `5`

(c) `10` and `10`

(d) `5` and `5`

5. True or False: "`x ** 2`" yields the identical result that is produced by "`x * x`" for all integer and `float` values of `x`.

6. True or False: "`x ** 2.0`" yields the identical result that is produced by "`x * x`" for all integer and `float` values of `x`.

7. What does Python print as a result of this statement?

```
print(5 + 6 % 7)
```

(a) This produces an error.

(b) `5 + 6 % 7`

(c) `11`

(d) `4`

8. What is the output from the `print()` statement in the following code?

```
x = 3 % 4 + 1
y = 4 % 3 + 1
x, y = x, y
print(x, y)
```

(a) `2 4`

(b) `4 2`

(c) `0 3`

(d) `3 0`

9. What is the output produced by the following code?

```
x = 3
y = 4
print("x", "y", x + y)
```

(a) `3 4 7`

(b) `x y 7`

(c) `x y x + y`

(d) `3 4 x + y`

(e) `x y 34`

For each of the following, determine the value to which the expression evaluates. (Your answer should distinguish between `floats` and `ints` by either the inclusion or exclusion of a decimal point.)

10. `5.5 - 11 / 2`

11. `5.5 - 11 // 2`

12. `10 % 7`

13. `7 % 10`
14. `3 + 2 * 2`
15. `16 / 4 / 2`
16. `16 / 4 * 2`
17. Given that the following Python statements are executed:

```
a = 2
b = a + 1 // 2
c = a + 1.0 // 2
d = (a + 1) // 2
e = (a + 1.0) // 2
f = a + 1 / 2
g = (a + 1) / 2
```

    Determine the values to which the variables `b` through `g` are set.

18. What output is produced when the following code is executed?

```
hello = "yo"
world = "dude"
print(hello, world)
```

    (a) `hello, world`
    (b) `yo dude`
    (c) `"yo" "dude"`
    (d) `yodude`
    (e) This produces an error.

19. The following code is executed. What is the output from the `print()` statement?

```
x = 15
y = x
x = 20
print(y)
```

    (a) `15`
    (b) `20`
    (c) `y`
    (d) `x`
    (e) This produces an error.

20. The following code is executed. What is the output from the `print()` statement?

```
result = "10" / 2
print(result)
```

    (a) `5`
    (b) `5.0`
    (c) `'"10" / 2'`
    (d) This produces an error.

21. The following code is executed. What is the output from the `print()` statement?

```
x = 10
y = 20
a, b = x + 1, y + 2
print(a, b)
```

    (a) `10 20`
    (b) `11 22`
    (c) `'a, b'`
    (d) `'x + 1, y + 2'`
    (e) This produces an error.

22. True or False: In general, "`x / y * z`" is equal to "`x / (y * z)`".

23. True or False: In general, "`x / y ** z`" is equal to "`x / (y ** z)`".

24. True or False: In general, "`w + x * y + z`" is equal to "`(w + x) * (y + z)`".

25. True or False: In general, "`w % x + y % z`" is equal to "`(w % x) + (y % z)`".

26. True or False: If both `m` and `n` are `int`s, then "`m / n`" and "`m // n`" both evaluate to `int`s.

27. True or False: The following three statements are all equivalent:

```
x = (3 +
4)

x = 3 + \
4

x = """3 +
4"""
```

28. Given that the following Python statements are executed:

```
x = 3 % 4
y = 4 % 3
```

What are the values of `x` and `y`?

29. To what value is the variable `z` set by the following code?

```
z = 13 + 13 // 10
```

(a) `14.3`

(b) `14.0`

(c) `2`

(d) `14`

(e) `16`

30. Assume the float variable `ss` represents a time in terms of seconds. What is an appropriate statement to calculate the number of complete minutes in this time (and store the result as an `int` in the variable `mm`)?

(a) `mm = ss // 60`

(b) `mm = ss / 60`

(c) `mm = ss % 60`

(d) `mm = ss * 60`

31. To what values does the following statement set the variables `x` and `y`?

```
x, y = divmod(13, 7)
```

(a) `6` and `1`

(b) `1` and `6`

(c) `6.0` and `2.0`

(d) This produces an error.