Week 1: Practice Drill 2

Python Expressions and Variables

September 5, 2025

Questions

R2.1

What is the value of `mystery` after this sequence of statements? *0*

```
1 mystery = 1
2 mystery = 1 - 2 * mystery
3 mystery = mystery + 1
```

R2.2

What is the value of `mystery` after this sequence of statements? *-2*

```
1 mystery = 1
2 mystery = mystery + 1
3 mystery = 1 - 2 * mystery
```

R2.4

Write the following Python expressions in mathematical notation.

a)
```
dm = m * (sqrt(1 + v / c) / sqrt(1 - v / c) - 1)
2
```

$$m = m \times \left(\frac{\sqrt{1 + \frac{v}{c}}}{\sqrt{1 - \frac{v}{c}}} - 1 \right)$$

R2.5

What are the values of the following expressions? In each line, assume that:

- x = 2.5
- y = -1.5
- m = 18
- n = 4

a)
```
x + n * y - (x + n) * y
2
```
6.25

c) `5 * x - n / 5`   11.7
    2

d) `1 - (1 - (1 - (1 - (1 - n))))`   − 3
    2

R2.8

Find at least three errors in the following program.

```
1  int x = 2
2  print(x, "squared is", x * x)
3  xcubed = x ** 3
```