Solution 08: Python For-Loop with List

1) What does this print?

Output:

```
red
blue
green
```

2) The loop variable

- On the **first** loop, `x` is `5`
- On the **last** loop, `x` is `7`

3) Complete the traversal code

```
animals = ["cat", "dog", "bunny"]

for a in animals:
    print("I like", a)
```

Output:

```
I like cat
I like dog
I like bunny
```

4) Spot the indentation mistake

One correct fix:

```
numbers = [1, 2, 3]
for x in numbers:
    print(x)
```

5) Fill in the blanks (sum)

```
numbers = [4, 1, 3]

total = 0
for x in numbers:
    total = total + x

print(total)
```

Output:

```
8
```

6) Running total (what does it print?)

Output:

```
1
5
7
```

7) Write code (sum)

One possible solution:

```
scores = [10, 20, 15]

total = 0
for x in scores:
    total = total + x

print("Sum =", total)
```

Output:

```
Sum = 45
```

8) Fill in the blanks (max)

```
numbers = [5, 1, 8, 3]

m = numbers[0]
for x in numbers:
    if x > m:
        m = x

print(m)
```

Output:

```
8
```

9) Max with negative numbers (what does it print?)

Output:

```
-1
```

10) Write code (max)

One possible solution:

```
temperatures = [72, 68, 75, 70]

m = temperatures[0]
for x in temperatures:
    if x > m:
        m = x

print(m)
```

Output:

```
75
```

11) Pick evens (what does it print?)

Output:

```
[2, 4]
```

12) Fill in the blanks (multiples of 3)

```
numbers = [3, 4, 6, 7, 9]

threes = []
for x in numbers:
    if x % 3 == 0:
        threes.append(x)

print(threes)
```

Output:

```
[3, 6, 9]
```

13) Write code (numbers greater than 5)

One possible solution:

```
numbers = [1, 8, 3, 10, 5]

big = []
for x in numbers:
    if x > 5:
        big.append(x)

print(big)
```

Output:

```
[8, 10]
```

14) Print in reverse order (what does it print?)

Output:

```
blue
green
red
```

15) Make a reversed list (fill in the blanks)

```
numbers = [9, 8, 7, 6]

rev = []
n = len(numbers)

for i in range(n - 1, -1, -1):
    rev.append(numbers[i])

print(rev)
```

Output:

```
[6, 7, 8, 9]
```

16) Challenge: Reverse words

One possible solution:

```
words = ["I", "love", "Python"]

rev = []
n = len(words)

for i in range(n - 1, -1, -1):
    rev.append(words[i])

print(rev)
```

Output:

```
['Python', 'love', 'I']
```