1. What is the output of the following code?
```
x = 10
y = 3
z = x / y
print(z)
```
A) 3
B) 3.3333333333333335
C) 3.0
D) None of the above

Solution: B) 3.3333333333333335. When dividing two integers, Python automatically converts the result to a float if necessary.

2. What is the output of the following code?
```
x = 5
y = 3
z = x % y
print(z)
```
A) 2
B) 1
C) 0
D) None of the above

Solution: B) 2. The modulus operator (%) returns the remainder of the division between two numbers.

3. What is the output of the following code?
```
x = 10
y = 2
z = x ** y
print(z)
```
A) 8
B) 20
C) 100
D) None of the above

Solution: C) 100. The double asterisk operator (**) is used for exponentiation.

4. What is the value of x after the following code executes?

```
x = 5
x += 3
x *= 2
x /= 4
```
A) 5
B) 4
C) 6
D) 8
Solution: B) 4. The code is equivalent to x = ((5 + 3) * 2) / 4.

5. What is the output of the following code?
```
x = 5
if x > 3:
    print("x is greater than 3")
else:
    print("x is less than or equal to 3")
```
A) x is greater than 3
B) x is less than or equal to 3
C) Error
D) None of the above
Solution: A) x is greater than 3. The code compares x to 3 using the greater than operator (>).

6. What is the output of the following code?
```
x = 1
while x < 10:
    print(x)
    x += 2
```
A) 1 3 5 7 9
B) 1 2 3 4 5 6 7 8 9
C) 2 4 6 8
D) None of the above
Solution: A) 1 3 5 7 9. The code uses a while loop to print odd numbers between 1 and 10.

7. What is the output of the following code?
```
x = 1
while x < 10:
    if x % 2 == 0:
```

```
    print(x)
  x += 1
```
A) 2 4 6 8
B) 1 3 5 7 9
C) 1 2 3 4 5 6 7 8 9
D) None of the above

Solution: A) 2 4 6 8. The code uses a while loop to check if x is even and then prints it if it is.

8. What is the output of the following code?
```
x = 5
while x > 0:
    print(x)
    if x == 3:
        break
    x -= 1
```
A) 5 4 3
B) 5 4
C) 5 4 3 2 1
D) None of the above

Solution: A) 5 4 3. The code uses a while loop to print the numbers from 5 to 1. However, when x equals 3, the break statement is executed and the loop is terminated.

9. What is the output of the following code?
```
x = 0
while x < 10:
    x += 1
    if x % 2 == 0:
        continue
    print(x)
```
A) 1 3 5 7 9
B) 2 4 6 8 10
C) 1 2 3 4 5 6 7 8 9 10
D) None of the above

Solution: A) 1 3 5 7 9. The code uses a while loop to check if x is even. If x is even, the continue statement is executed and the loop skips to the next iteration. If x is odd, the code prints x.

10. What is the output of the following code?

```
x = 10
while x > 0:
    print(x)
    x -= 1
```

A) 10 9 8 7 6 5 4 3 2 1
B) 9 8 7 6 5 4 3 2 1
C) 10
D) None of the above

Solution: A) 10 9 8 7 6 5 4 3 2 1. The code uses a while loop to print the numbers from 10 to 1.