1. Numbers divisible by 7 and Multiples of 5

```
divisible_numbers = []
for num in range(1500, 2700):
    if num % 7 == 0 and num % 5 == 0:
        divisible_numbers.append(num)
print("Numbers divisible by 7 and multiple of 5 between 1500 and 2700:")
print(divisible_numbers)
```

2. To print numbers between 0 to 6 except 3 and 6

```
for num in range(7):
    if num == 3 or num == 6:
        continue
print(num, end=" ")
```

3. To print fizz and buzz

```
for num in range(1, 51):
    if num % 3 == 0 and num % 5 == 0:
        print("FizzBuzz")
    elif num % 3 == 0:
        print("Fizz")
    elif num % 5 == 0:
        print("Buzz")
    else:
        print(num)
```

4. To check type of a triangle

```
x = float(input("Enter the length of side x: "))
y = float(input("Enter the length of side y: "))
z = float(input("Enter the length of side z: "))
```

```
if  (x == y == z ):
   triangle_type = "Equilateral triangle"
elif x != y and y != z and x != z:
   triangle_type = "Scalene triangle"
else:
   triangle_type = "Isosceles triangle"
print(triangle_type)
```

5.To calculate sum and average of an integer

```
numbers = []
while True:
   num = int(input("Enter an integer number : "))
   if num == 0:
      break
   numbers.append(num)
if numbers:
   total_sum = sum(numbers)
   average = total_sum / len(numbers)
   print("Sum: {total_sum}, Average: {average}")
else:
   print("Invalid.")
```

6. To print numbers in pattern

```
for i in range(1, 10):
   for j in range(i):
      print(i, end="")
   print()
```

7.To count the number of elements

```
numbers_list = [15, 45, 25, 50, 10, 35, 40, 5]
count_greater _than_30 = sum(1 for num in numbers_list if num > 30)
print("Count of numbers greater than 30: {count_greater_than_30}")
```

8. To check for a square

```
length = float(input("Enter the length: "))
breadth = float(input("Enter the breadth: "))
if length == breadth:
    print("It's a square.")
else:
    print("It's a rectangle.")
```

9. To calculate total cost and apply 10% discount

```
quantity = int(input("Enter the quantity: "))
cost_per_unit = 100
total_cost = quantity * cost_per_unit
if total_cost > 1000:
    total_cost *= 0.9
print("Total cost: {total_cost:.2f}")
```

10. To calculate and print net bonus

```
salary = float(input("Enter your salary: "))
years_of_service = int(input("Enter your years of service: "))
if years_of_service > 5:
    bonus = 0.05 * salary
    print(f"Net bonus amount: {bonus:.2f}")
else:
    print("No bonus.")
```

11. To print corresponding grades of students

```
marks = int(input("Enter your marks: "))
if marks < 25:
    grade = "F"
elif marks < 45:
    grade = "E"
elif marks < 50:
    grade = "D"
elif marks < 60:
    grade = "C"
elif marks < 80:
    grade = "B"
else:
    grade = "A"
print(f"Your grade is: {grade}")
```

12. To calculate the percentage of classes attended

```
classes_held = int(input("Enter the number of classes held: "))
classes_attended = int(input("Enter the number of classes attended: "))
attendance_percentage = (classes_attended / classes_held) * 100
if attendance_percentage >= 75:
    print("Attendance percentage: {attendance_percentage:.2f}%")
    print("You are allowed to sit in the exam.")
else:
    print("Attendance percentage: {attendance_percentage:.2f}%")
    print("You are not allowed to sit in the exam.")
```

13. To calculate the average value of 10 integers

```
total = 0
for i in range(10):
    num = int(input(f"Enter integer {i + 1}: "))
    total += num
average = total / 10
print(f"Average value: {average}")
```

14. To print the multiplication tables of 24,50,29

```
numbers = [24, 50, 29]
for num in numbers:
    print("Multiplication table of {num}:")
    for i in range(1, 11):
        print("{num} x {i} = {num * i}")
    print()
```

15. To calculate and print the average and product of all the entered numbers

```
numbers = []
while True:
    num_input = input("Enter an integer (press 'q' to quit): ")
    if num_input.lower() == 'q':
        break
    num = int(num_input)
    numbers.append(num)
if numbers:
    average = sum(numbers) / len(numbers)
    product = 1
    for num in numbers:
        product *= num
```

```
    print(f"Average: {average:.2f}")
    print(f"Product: {product}")
else:
    print("No numbers entered.")
```

16. To search and delete an element

```
list_size = int(input("Enter the size of the list: "))
user_list = []
for  in range(list_size):
    element = input("Enter an element: ")
    user_list.append(element)
search_element = input("Enter an element to search and delete: ")
for element in user_list:
    if element == search_element:
        user_list.remove(element)
        print(f"Element '{element}' found and deleted from the list.")
        break      //Stop searching after deleting the first occurrence
print("Updated list:", user_list)
```

17. To create three lists that containing even ,odd and prime numbers respectively

```
def is_prime(num):
    if num <= 1:
        return False
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            return False
    return True
even_numbers = [num for num in range(1, 101) if num % 2 == 0]
odd_numbers = [num for num in range(1, 101) if num % 2 != 0]
```

```
prime_numbers = [num for num in range(1, 101) if is_prime(num)]
print("Even numbers:", even_numbers)
print("Odd numbers:", odd_numbers)
print("Prime numbers:", prime_numbers)
```

18. Divisible by 4, 6, 8, 10, 3, 5, 7, and 9

```
divisible_by_4 = [num for num in even_numbers if num % 4 == 0]
divisible_by_6 = [num for num in even_numbers if num % 6 == 0]
divisible_by_8 = [num for num in even_numbers if num % 8 == 0]
divisible_by_10 = [num for num in even_numbers if num % 10 == 0]
divisible_by_3 = [num for num in odd_numbers if num % 3 == 0]
divisible_by_5 = [num for num in odd_numbers if num % 5 == 0]
divisible_by_7 = [num for num in prime_numbers if num % 7 == 0]
divisible_by_9 = [num for num in prime_numbers if num % 9 == 0]
```

19. Separate ints, strings, and floats from a list

```
mixed_list = [1, 'apple', 2.5, 'banana', 3, 4.0, 'cherry']
integers_list = [item for item in mixed_list if isinstance(item, int)]
strings_list = [item for item in mixed_list if isinstance(item, str)]
floats_list = [item for item in mixed_list if isinstance(item, float)]
```

20. Square of elements in a list

```
previous_list = [1, 2, 3, 4, 5]
squared_list = [num ** 2 for num in previous_list]
print("Divisible by 4:", divisible_by_4)
print("Divisible by 6:", divisible_by_6)
print("Divisible by 8:", divisible_by_8)
print("Divisible by 10:", divisible_by_10)
print("Divisible by 3:", divisible_by_3)
```

```
print("Divisible by 5:", divisible_by_5)
print("Divisible by 7:", divisible_by_7)
print("Divisible by 9:", divisible_by_9)

print("Integers:", integers_list)
print("Strings:", strings_list)
print("Floats:", floats_list)

print("Squared list:", squared_list)
```