EXERCISE

- Flowchart

1. Write a flowchart that receive a number like an input, then plus five, and show a number.

2. Write a flowchart that receive a number like an input of num1, num2. For num3, it is equal to 4. After that, bring num1 plus num2 then minus num3. Finally, show a total of number.

3. Write a flowchart that receive a number like an input, then multiply 3. If the result more than 10, it will show “Good”. And another result will show “Bad”.

4. Write a flowchart that receive a score of students like an input, then divide 2. If the result more than 40, it will show “Very good”. If the result less than or equal to 40 but more than 30, it will show “Good”. Another result will show “Bad”.

5.

```
count = 0

while count < 10:
    print(count)
    count += 1
```

Output:

```
0
1
2
3
4
5
6
7
8
9
```

- Number Base

1. Convert 232_8 to base 10
2. Convert 337_8 to base 2
3. Express 38_{10} as a number in base 16
4. Convert 337_{10} to base 2
5. Convert 39_{10} to base 2
6. Convert 110011001_2 to base 10
7. Convert $18AE_{16}$ to base 2
8. Convert 67_8 to base 16
9. Convert 110011001_2 to base 8
10. Convert 66_{10} to base 8
11. $1F0_{16} + 34_{16}$
12. $34_8 – 10_8$
13. $11001_2 + 10110_2$
14. $A_{16} + B_{16}$
15. $101_2 - 5_{10}$ (answer can be base 10 or base 2)

- “And” and “Or” Operator

1. True and False
2. False or True
3. 3 < 4 or 11 > 9

4.

```
s1 = "String"
s2 = "int"
if s1 == "String" and s2 == "Int":
    print("Yes")
else:
    print("No")
```

5.

```
x = 15.2
y = 14

if x == 15.2 or y == "14":
    print("Yes")
else:
    print("No")
```

6.

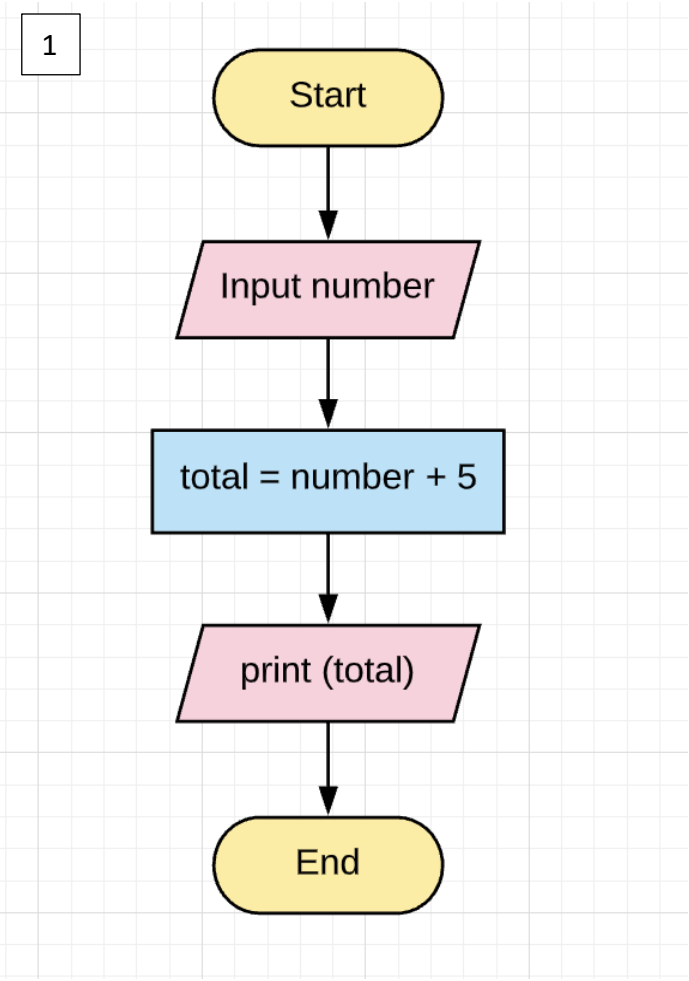
```
x = 23
y = "student"

if x == "23" or y == "sTudenT":
    print("Yes")
else:
    print("No")
```

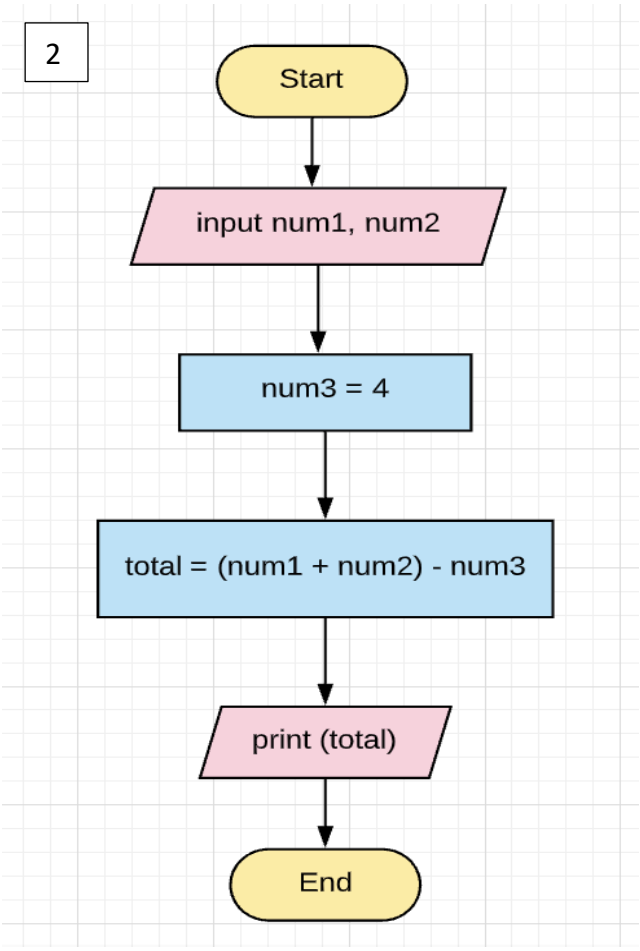
Answer

- Flowchart

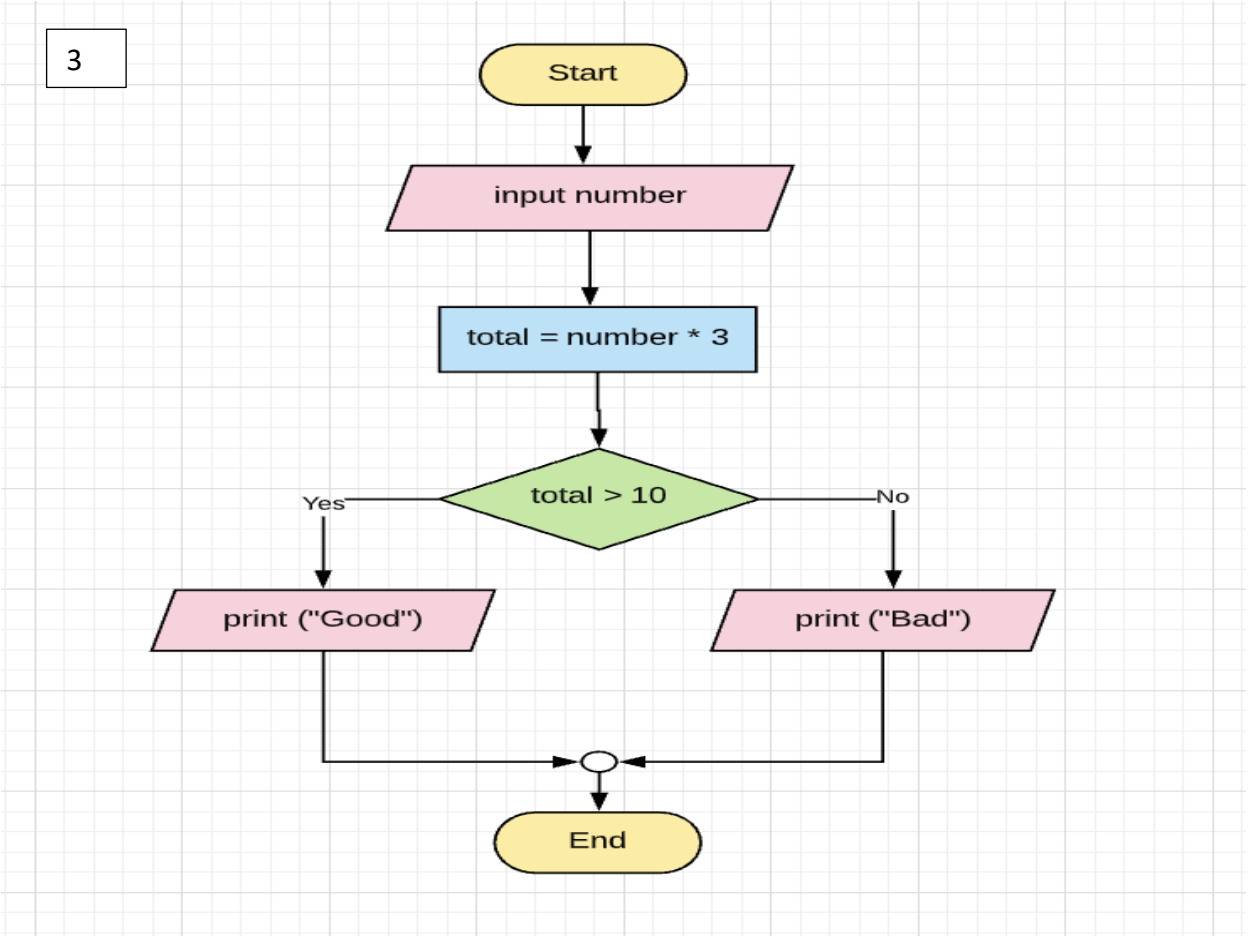
1



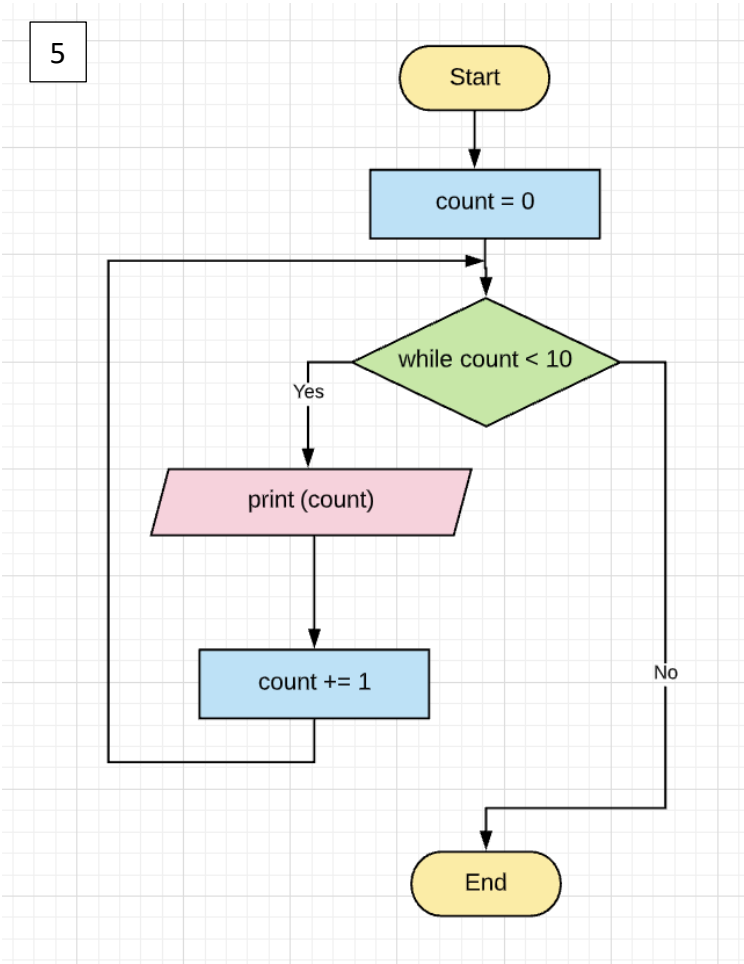
2



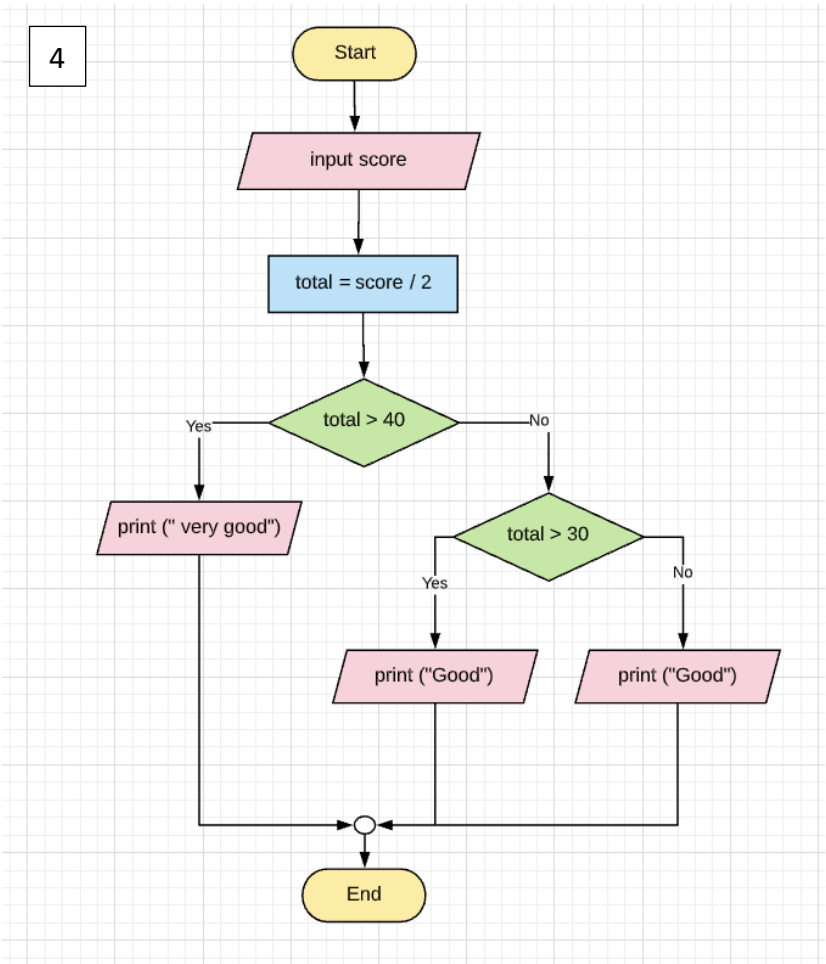
3


Start
input number
total = number * 3
total > 10
Yes
No
print ("Good")
print ("Bad")
End

5


Start
count = 0
while count < 10
Yes
No
print (count)
count += 1
End

4


Start
input score
total = score / 2
total > 40
Yes
No
print (" very good")
total > 30
Yes
No
print ("Good")
print ("Good")
End

- Number Base

1. 154_{10}
2. 11011111_2
3. 26_{16}
4. 101010001_2
5. 100111_2
6. 409_{10}
7. 1100010101110_2
8. 37_{16}
9. 631_8
10. 102_8
11. 224_{16}
12. 24_8
13. 101111_2
14. 16_{16}
15. 0_2 or 0_{10}

- “And” and “Or” Operator

1. False
2. True
3. True
4. “No”
5. “Yes”
6. “No”