Problem solving and decoding of questions

Before coding..

1. Did you understand the question?

2. Will you be able to explain the question to someone else?

3. How many inputs are needed?

4. What will be the output?

5. Will you have to break down the problem into parts?

6. Is the data sufficient and is your idea the most optimal way to solve it?

1,2- the question- calculator

3- 10, 20, +

4- 30

5- +,-,*,/

While coding..

1. Design an algorithm or a flowchart

2. Start with the functional modules

3. Connect the different parts

4. Recheck

1-
start
input-var1, var2, operator
If operator is +
result=var1+var2
If operator is -
result=var1-var2
If operator is *
result=var1*var2
If operator is /
result=var1/var2

2-
```
def add(x, y):
  return x + y
def subtract(x, y):
  return x - y
def multiply(x, y):
   return x * y
def divide(x, y):
   return x / y
```

3-
Include the main body

```
def add(x, y):
    return x + y

def subtract(x, y):
   return x - y

def multiply(x, y):
  return x * y

def divide(x, y):
  return x / y

print("Select operation.1-add,2-sub,3-mul,4-div")
choice = input("Enter choice(1/2/3/4): ")
x = float(input("Enter first number: "))
y = float(input("Enter second number: "))

if choice == '1':
  print(x, "+", y, "=", add(x, y))
elif choice == '2':
  print(x, "-", y, "=", subtract(x, y))
elif choice == '3':
  print(x, "*", y, "=", multiply(x, y))
elif choice == '4':
  print(x, "/", y, "=", divide(x, y))
else:
  print("Invalid Input")
```

After coding..

1. Test cases

2. Debug and fix the functionality

3. TRY optimizing it further

```
def add(x, y):
    return x + y

def subtract(x, y):
   return x - y

def multiply(x, y):
  return x * y

def divide(x, y):
  return x / y

print("Select operation.1-add,2-sub,3-mul,4-div")
choice = input("Enter choice(1/2/3/4): ")
x = float(input("Enter first number: "))
y = float(input("Enter second number: "))

if choice == '1':
  print(x, "+", y, "=", add(x, y))
elif choice == '2':
  print(x, "-", y, "=", subtract(x, y))
elif choice == '3':
  print(x, "*", y "=", multiply(x, y))
elif choice == '4':
  if y!=0:
    print(x, "/", y, "=", divide(x, y))
  else:
    print("Divisor cannot be 0")
else:
  print("Invalid Input")
```