

#1) Define the function and variable declarations given above in the IDLE shell and execute the following expressions, Which of the statements are valid?

```
#c) Invalid as n4,n5,n6 arent defined.  
#d) valid  
#e) invalid as n5 ,n4 arent defined.
```

#1) a) types() that prints a given value both as a float and an integer.

```
def types(num):  
    print(float(num))  
    print(int(num))  
  
types(8)  
  
8.0  
8
```

#b) squared() that take an integer and returns the value squared.

```
def squared(num):  
    return num*num  
  
print(squared(5))  
  
25
```

#c) int_to_string() that takes an integer value and returns it as a string.

```
def int_to_string(num):  
    return str(num)  
print(int_to_string(69))  
  
69
```

#d) hello_world() that takes a parameter name and displays the following output to the console, "Hello World, my name is name".

```
def hello_world(name):  
    print(f"Hello world, my name is {name}")  
  
hello_world("zed")  
  
Hello world, my name is zed
```

#e) improved_average() that takes five integer parameters, It should return the mode, median and mean values of the numbers passed to the function.

```
from statistics import mode, median, mean  
def improved_average(*args):  
    return f"Mode: {mode(args)}, Median: {median(args)}, Mean: {mean(args)}"  
  
print(improved_average(69,420,69,420,69))  
  
Mode: 69, Median: 69, Mean: 209.4
```

Part 3 # 1) Create a function that prompts the user for two integer values and displays the results of the first number divided by the second to two decimal places.

```
def divide():  
    a,b = [int(x) for x in input("Enter 2 numbers with spaces: ").split()]  
    print(format(a/b, ".2f"))  
  
divide()  
  
Enter 2 numbers with spaces: 6 3  
2.00
```

2) Create a Python program called calculator with functions to perform the following arithmetic calculations, each should take two decimal parameters and return the result of the arithmetic calculation in question (add,subtract,divide,multiply,modulo,exponent).

```
def add(a,b):  
    """
```

returns a modulo b

Parameters:

a (int): a.

b (int): b.

Returns:

int: The sum of a and b .

"""

return a+b;

def multiply(a,b):

"""

returns a modulo b

Parameters:

a (int): a.

b (int): b.

Returns:

int: The product of a and b .

"""

return a*b;

def divide(a,b):

"""

returns a modulo b

Parameters:

a (int): a.

b (int): b.

Returns:

int: The quotient of dividing a by b .

"""

return a/b;

def modulo(a,b):

"""

returns a modulo b

Parameters:

a (int): a.

b (int): b.

Returns:

int: The remainder of dividing a by b .

"""

return a%b;

def exponent(a,b):

"""

returns a raised to the power b

Parameters:

a (int): a.

b (int): a^b.

Returns:

```
int: The result of raising a to the power of b.
"""
return a**b;

# ... eval(input("Enter mathematical operation: "))

"""
help(exponent)
Help on function exponent in module __main__:

exponent(a, b)
    returns a raised to the power b

Parameters:
a (int): a.
b (int): a^b.

Returns:
int: The result of raising a to the power of b.
(END)
"""
```

#Part 4 # Write a Python program that asks the user to enter their scores for five assignments (each worth 100 points) and calculate their overall grade as a percentage.

```
def calculateMarks():
    scores = [int(x) for x in input("Enter marks in 5 subjects (with spaces): ").split()]
    print(f"Your total score is {sum(scores)} and the maximum possible score was 500.")
    print(f"Obtained Percentage: {format(((sum(scores)/500)*100),'.2f')}%")

calculateMarks()

Enter marks in 5 subjects (with spaces): 100 69 42 100 100
Your total score is 411 and the maximum possible score was 500.
Obtained Percentage: 82.20%
```
