

Cool Calculations Answers

Type these calculations into Python IDLE (Interactive mode window) and write down the answers that Python returns:

a) `>>> print(7 * 9)` Answer: **63**

b) `>>> print(63.74 - 21.16)` Answer: **42.58**

c) `>>> print(87 / 6)` Answer: **14.5**

d) `>>> print(12 * 0.0)` Answer: **0.0**

e) `>>> print(7 + 4 * 8)` Answer: **39**

Type these calculations into Python IDLE, write down the answers that Python returns, and see if you can figure out what Python is doing with the numbers:

f) `>>> print(10 // 3)` Answer: **3**

What do you think the `//` means in Python? What is Python doing with these numbers?

// means integer division (or floored quotient).

Python returns the result of a division (e.g. $10 / 3$) but without any fractional part.

g) `>>> print(5 ** 2)` Answer: **25**

**** means power (or exponent or index).**

Python returns the result of the first number to the power of the second number.

h) `>>> print(15 % 2)` Answer: **1**

i) `>>> print(14 % 2)` Answer: **0**

What do you think the `%` means in Python? What is Python doing with these numbers?

% means modulo division (or remainder division).

Python returns the remainder of the division between the two values.

BIDMAS

What do the letters BIDMAS stand for?

Brackets, Indices, Division, Multiplication, Addition, Subtraction

Type this calculation into Python IDLE, and write down the answer that Python returns:

```
>>> print(7 + 4 * 8)
```

 Answer: **39**

How can we make Python return an answer of 88 for the calculation above? What extra symbols would we need to include, and where? Write down your answer here:

```
print((7 + 4) * 8)
```

Python Pie

Type the following two lines into Python IDLE

(Interactive mode window):

```
>>> import math
>>> print(math.pi)
```

What output did you see on screen? Answer: **3.141592653589793**

Puzzled Python

Type this last calculation into Python IDLE,
and write down the answer that Python returns:

```
>>> print(10 / 0)
```

 Answer: **ZeroDivisionError: division by zero**

What has gone wrong? Why has Python given this message?

The result of any number divided by zero is infinity (theoretically).

Python therefore can't calculate the answer, and gives this error message.