question

What is the expected output of the following code?

```python
x = 9
y = 12
result = x // 2 * 2 / 2 + y % 2 ** 3
print(result)
```

options

   a) 8

   b) 9.0

   c) 8.0

   d) 7.0

answer

option **c**

Python Operator Precedence (from highest to lowest)

Precedence Level	Operator(s)	Description
1	()	Parentheses (grouping)
2	**	Exponentiation
3	+x, -x, ~x	Unary plus, minus, bitwise NOT
4	*, /, //, %	Multiplication, Division, Floor Division, Modulus
5	+, -	Addition, Subtraction
6	<<, >>	Bitwise shift
7	&	Bitwise AND
8	^	Bitwise XOR
9	` `	Bitwise OR
10	Comparisons (==, !=, <, >, <=, >=, is, in, etc.)	
11	not	Logical NOT
12	and	Logical AND
13	or	Logical OR
14	=, +=, -=	(and other assignment operators)

$$x // 2 ^* 2 / 2 + y \% 2 ^{**} 3$$

$$\underbrace{2 ^{**} 3}_{8}$$

$$9 // \underbrace{2 ^* 2}_{4} / 2 + 12 \% 8$$

$$9 // \underbrace{4 / 2}_{2.0} + \underbrace{12 \% 8}_{4}$$

$$9 // 2.0 + 4$$

$$4.0 + 4$$

$$8.0$$