98-381 Q&As

Introduction to Programming Using Python

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QUESTION 1

HOTSPOT

You are coding a math utility by using Python.

You are writing a function to compute roots.

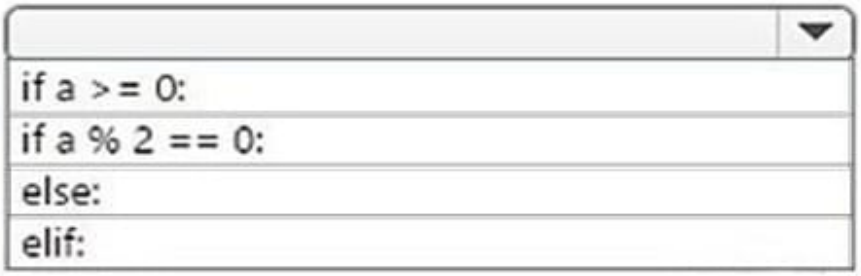
The function must meet the following requirements:

If `a` is non-negative, return `a**(1/b)`
If `a` is negative and even, return `"Result is an imaginary number"`
If `a` is negative and odd, return `-(-a)**(1/b)`

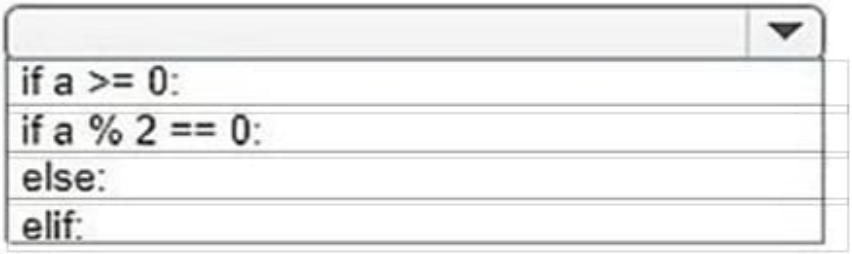
How should you complete the code? To answer, select the appropriate code segments in the answer area.

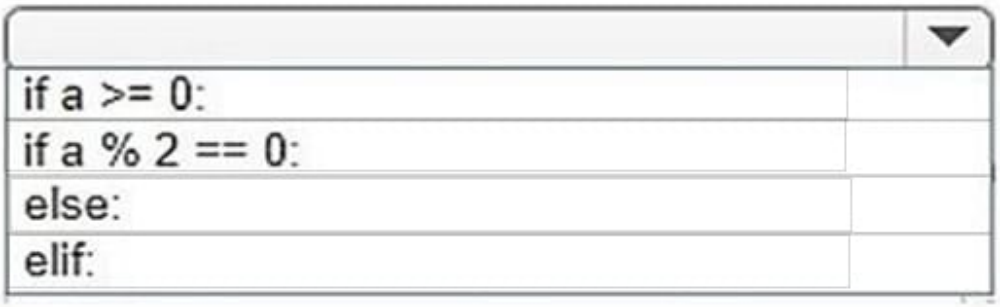
Hot Area:

```
def safe_root(a, b):
```

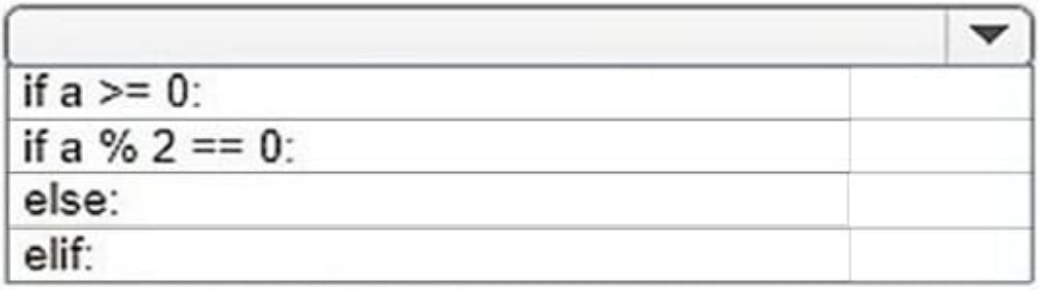



```
    answer = a**(1/b)
```





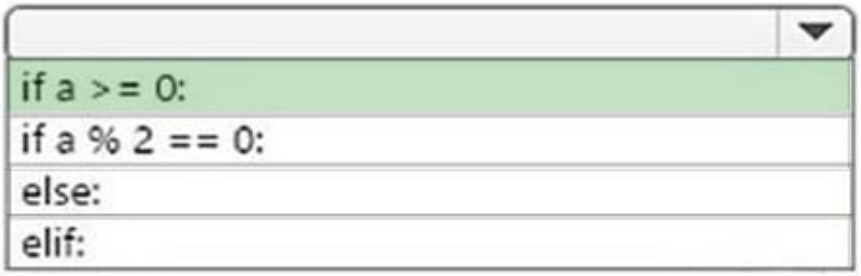

```
        answer = "Result is an imaginary number"
```



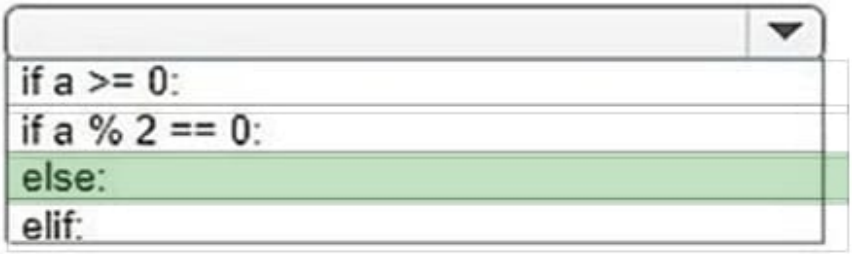

```
    answer = -(-a)**(1/b)
return answer
```

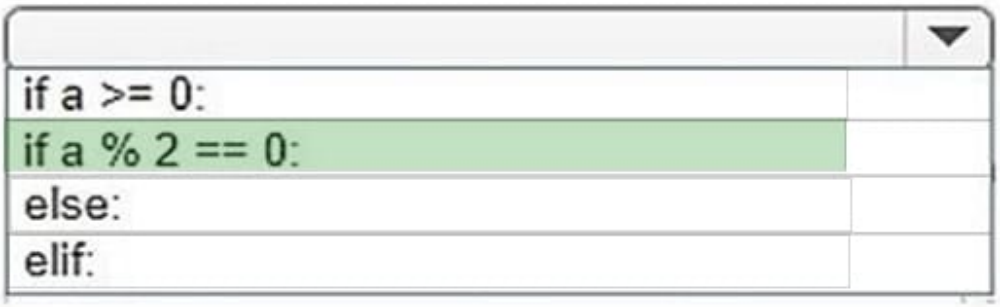
Correct Answer:

```
def safe_root(a, b):
```

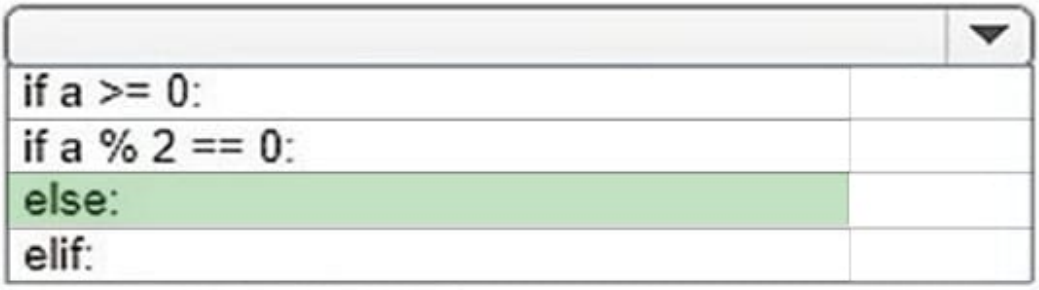



```
    answer = a**(1/b)
```






```
        answer = "Result is an imaginary number"
```




```
    answer = -(-a)**(1/b)
return answer
```

QUESTION 2

HOTSPOT

During school holidays, you volunteer to explain some basic programming concepts to younger siblings. You want to introduce the concept of data types in Python. You create the following three code segments:

```
# Code segment 1
x1 = "20"
y1 = 3
a = x1 * y1

# Code segment 2
x2 = 6
y2 = 4
b = x2 / y2

# Code segment 3
x3 = 2.5
y3 = 1
c = x3 / y3
```

You need to evaluate the code segments.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

	Yes	No
After executing code segment 1, the data type of variable `a` is `str`.	○	○
After executing code segment 2, the data type of variable `b` is `float`.	○	○
After executing code segment 3, the data type of variable `c` is `int`.	○	○

Correct Answer:

Answer Area

	Yes	No
After executing code segment 1, the data type of variable `a` is `str`.	○	●
After executing code segment 2, the data type of variable `b` is `float`.	●	○
After executing code segment 3, the data type of variable `c` is `int`.	○	●

QUESTION 3

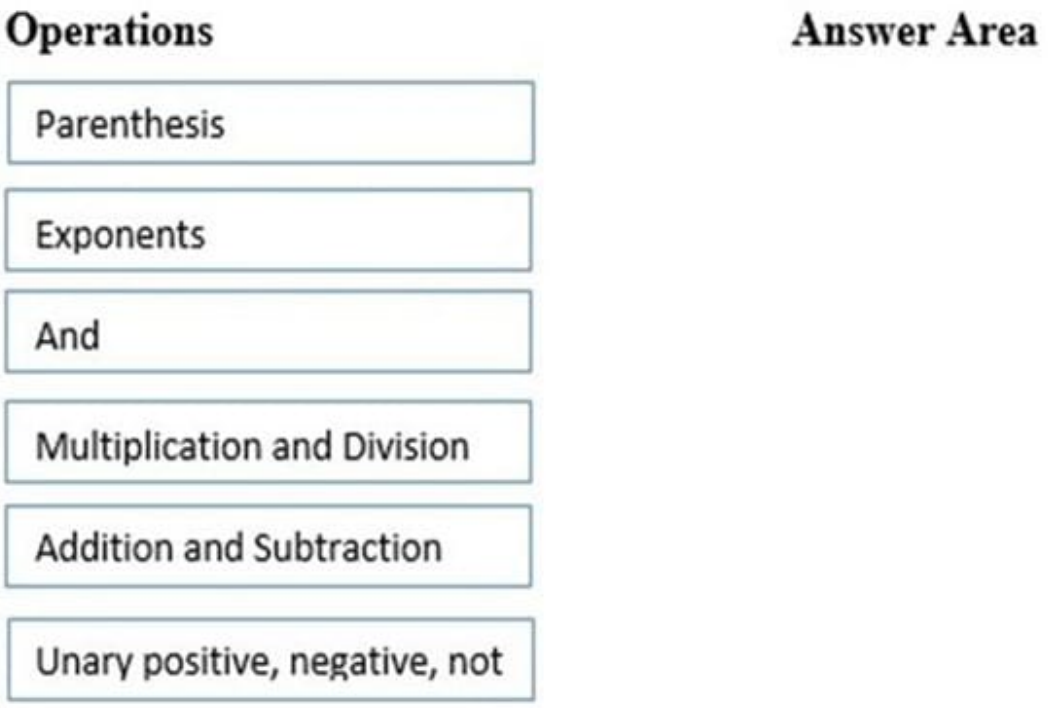
DRAG DROP

The ABC company is converting an existing application to Python. You are creating documentation that will be used by several interns who are working on the team.

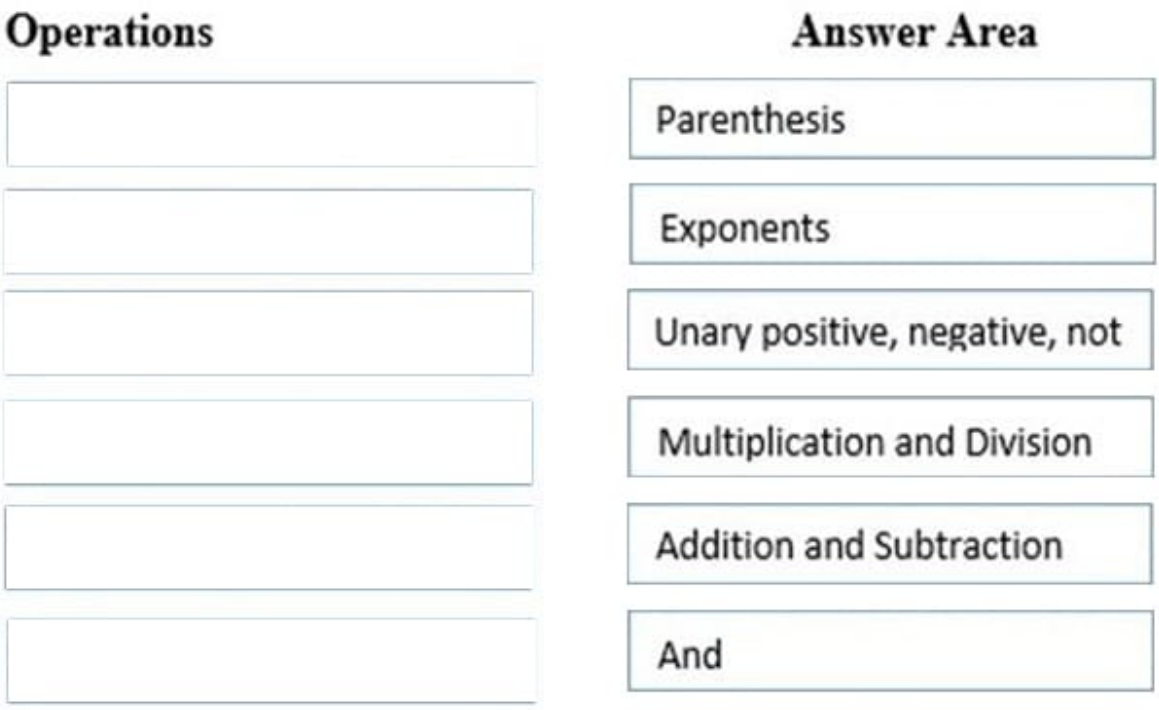
You need to ensure that arithmetic expressions are coded correctly.

What is the correct order of operations for the six classes of operations ordered from first to last in order of precedence? To answer, move all operations from the list of operations to the answer area and arrange them in the correct order.

Select and Place:



Correct Answer:



References: http://www.mathcs.emory.edu/~valerie/courses/fall10/155/resources/op_precedence.html

QUESTION 4

HOTSPOT

You create a function to calculate the power of a number by using Python.

You need to ensure that the function is documented with comments.

You create the following code. Line numbers are included for reference only.

```
01 # The calc_power function calculates exponents
02 # x is the base
03 # y is the exponent
04 # The value of x raised to the y power is returned
05 def calc_power(x, y):
06    comment = "#Return the value"
07    return x**y # raise x to the y power
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Hot Area:

Answer Area

	Yes	No
Lines 01 through 04 will be ignored for syntax checking.	○	○
The pound sign (#) is optional for lines 02 and 03.	○	○
The string in line 06 will be interpreted as a comment.	○	○
Line 07 contains an inline comment.	○	○

Correct Answer:

Answer Area

	Yes	No
Lines 01 through 04 will be ignored for syntax checking.	●	○
The pound sign (#) is optional for lines 02 and 03.	○	●
The string in line 06 will be interpreted as a comment.	○	●
Line 07 contains an inline comment.	○	●

QUESTION 5

HOTSPOT

The ABC company needs a way to find the count of particular letters in their publications to ensure that there is a good balance. It seems that there have been complaints about overuse of the letter e. You need to create a function to meet the

requirements.

How should you complete this code? To answer, select the appropriate code segments in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
#Function accepts list of words from a file,
#and letter to search for.
#Returns count of a particular letter in that list.


def count_letter(letter, word_list):
    count=0
    for [word_list in word: | word in word_list: | word == word_list: | word is word_list:]

        if [word is letter: | letter is word: | word in letter: | letter in word:]

            count += 1
        return count


word_list =[]


#word_list is populated a from file. Code not shown.

letter = input("which letter would you like to count")

letter_count= count_letter(letter, word_list)
print("There are: " , letter_count, " instances of " + letter)
```

Correct Answer:

Answer Area

```
#Function accepts list of words from a file,
#and letter to search for.
#Returns count of a particular letter in that list.


def count_letter(letter, word_list):
    count=0
    for [word_list in word: | word in word_list: | word == word_list: | word is word_list:]
        if [word is letter: | letter is word: | word in letter: | letter in word:]
            count += 1
    return count

word_list =[]

#word_list is populated a from file. Code not shown.

letter = input("which letter would you like to count")

letter_count= count_letter(letter, word_list)
print("There are: " , letter_count, " instances of " + letter)
```

QUESTION 6

You are creating a function that manipulates a number. The function has the following requirements: A float is passed into the function The function must take the absolute value of the float Any decimal points after the integer must be removed

Which two math functions should you use? Each correct answer is part of the solution. (Choose two.)

A. math.fmod(x)

B. math.frexp(x)

C. math.floor(x)

D. math.ceil(x)

E. math.fabs(x)

Correct Answer: CE

C: math.floor(x) returns the largest integer less than or equal to x.

E: math.fabs(x) returns the absolute value of x. Incorrect Answers:

A: math.fmod() takes two variables

B: math.frexp(x) returns the mantissa and exponent of x as the pair (m, e). m is a float and e is an integer

D: math.ceil(x) returns the smallest integer greater than or equal to x

References: https://docs.python.org/2/library/math.html#number-theoretic-and-representation-functions https://docs.python.org/3/library/math.html

QUESTION 7

HOTSPOT

The ABC company is building a basketball court for its employees to improve company morale.

You are creating a Python program that employees can use to keep track of their average score.

The program must allow users to enter their name and current scores. The program will output the user name and the user\\'s average score. The output must meet the following requirements:

The user name must be left-aligned.

If the user name has fewer than 20 characters, additional space must be added to the right.

The average score must have three places to the left of the decimal point and one place to the right of the decimal (XXX.X).

How should you complete the code? To answer, select the appropriate code segments in the answer area. NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
name = input("what is your name?")
score = 0
count = 0
while(score != -1):
    score = int(input("Enter your scores: (-1 to end)"))
    if score == -1:
        break
    sum += score
    count += 1
average_score = sum / count
print("[ ], your average score is: [ ]"%(name, average))
```

First blank: %-20i | %-20d | %-20f | %-20s

Second blank: %1.4s | %4.1f | %4.1s | %1.4f

Correct Answer:

Answer Area

```
name = input("what is your name?")
score = 0
count = 0
while(score != -1):
    score = int(input("Enter your scores: (-1 to end)"))
    if score == -1:
        break
    sum += score
    count += 1
average_score = sum / count
print("[%-20i / %-20d / %-20f / %-20s], your average score is: [%1.4s / %4.1f / %4.1s / %1.4f]"%(name, average))
```

References: https://www.python-course.eu/python3_formatted_output.php

QUESTION 8

You are writing code that generates a random integer with a minimum value of 5 and a maximum value of 11. Which two functions should you use? Each correct answer presents a complete solution. (Choose two.)

A. random.randint(5, 12)

B. random.randint(5, 11)

C. random.randrange(5, 12, 1)

D. random.randrange(5, 11, 1)

Correct Answer: BC

References: https://docs.python.org/3/library/random.html#

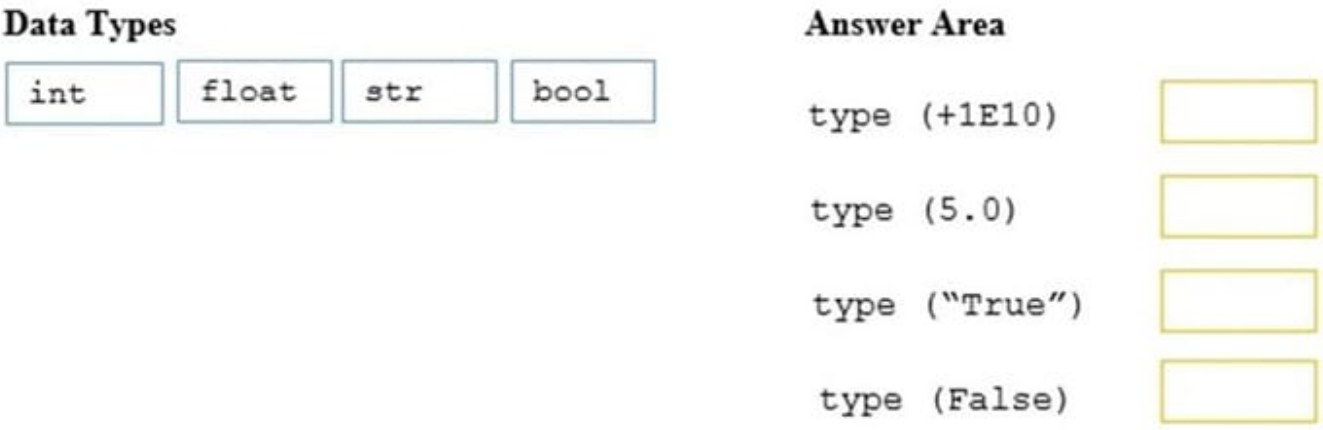
QUESTION 9

DRAG DROP

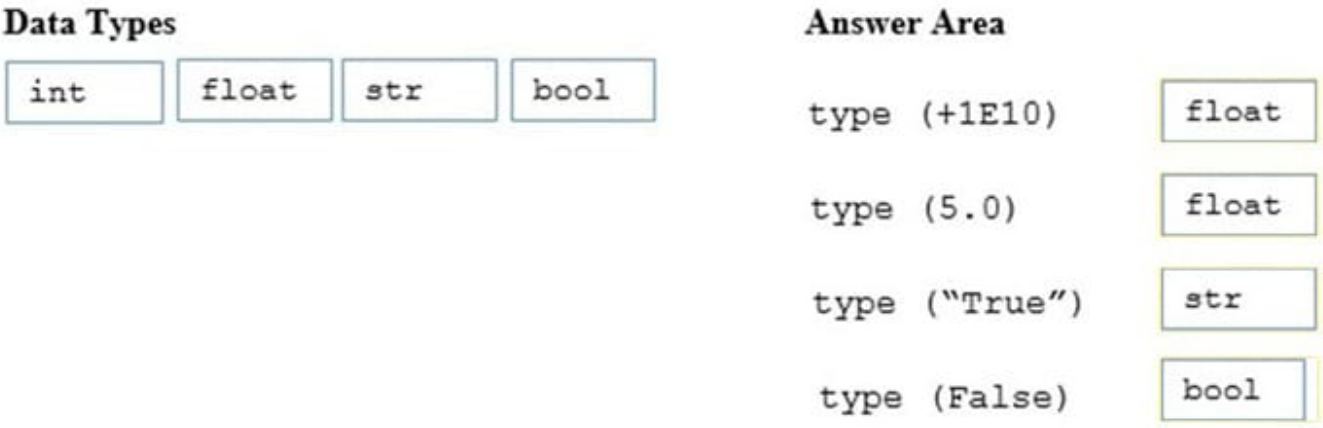
Match the data type to the type operations.

To answer, drag the appropriate data type to the correct type operation. Each data type may be used once, more than once, or not at all.

Select and Place:



Correct Answer:



References: https://www.w3resource.com/python/python-data-type.php

QUESTION 10

You develop a Python application for your company.

You want to add notes to your code so other team members will understand it.

What should you do?

A. Place the notes after the # sign on any line

B. Place the notes after the last line of code separated by a blank line

C. Place the notes before the first line of code separated by a blank line

D. Place the notes inside of parentheses on any time

Correct Answer: A

References: http://www.pythonforbeginners.com/comments/comments-in-python