98-381.exam.21q

Number: 98-381
Passing Score: 800
Time Limit: 120 min

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98-381

Introduction to Programming Using Python

Exam A

QUESTION 1
The ABC company has hired you as an intern on the coding team that creates e-commerce applications.

You must write a script that asks the user for a value. The value must be used as a whole number in a calculation, even if the user enters a decimal value.

You need to write the code to meet the requirements.

Which code segment should you use?

A. `totalItems = input("How many items would you like?")`
B. `totalItems = float(input("How many items would you like?"))`
C. `totalItems = str(input("How many items would you like?"))`
D. `totalItems = int(input("How many items would you like?"))`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
References: http://anh.cs.luc.edu/python/hands-on/3.1/handsonHtml/io.html

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`.	○	●

Section: (none)
Explanation

Explanation/Reference:
Explanation:

- Code Segment 1: You cannot convert str to int. x1 = “2” is a string. Therefore code will produce an error.
- Code Segment 2: b = 1.5, which is a float.
- Code Segment 3: c = 2.5, which is a float, not an int.

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

QUESTION 3
DRAG DROP

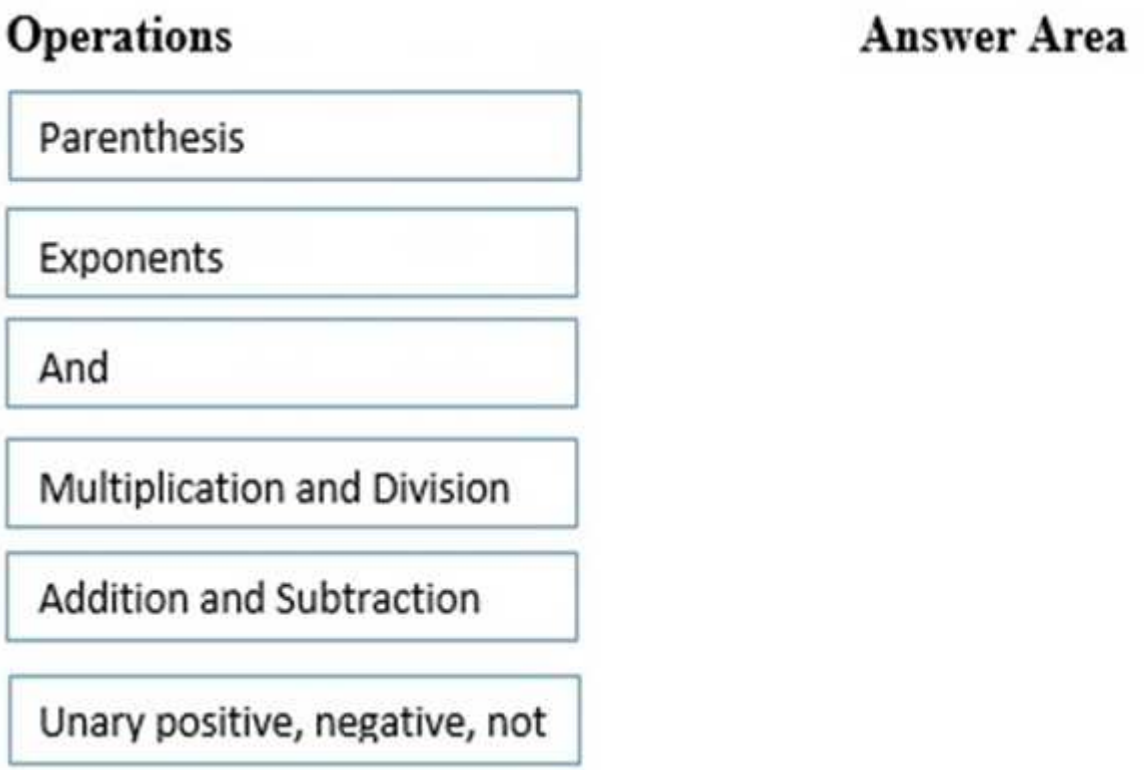
The ABC company is converting an existing application to Python. You are creating documentation that will be used by several interns who are working on the team.

You need to ensure that arithmetic expressions are coded correctly.

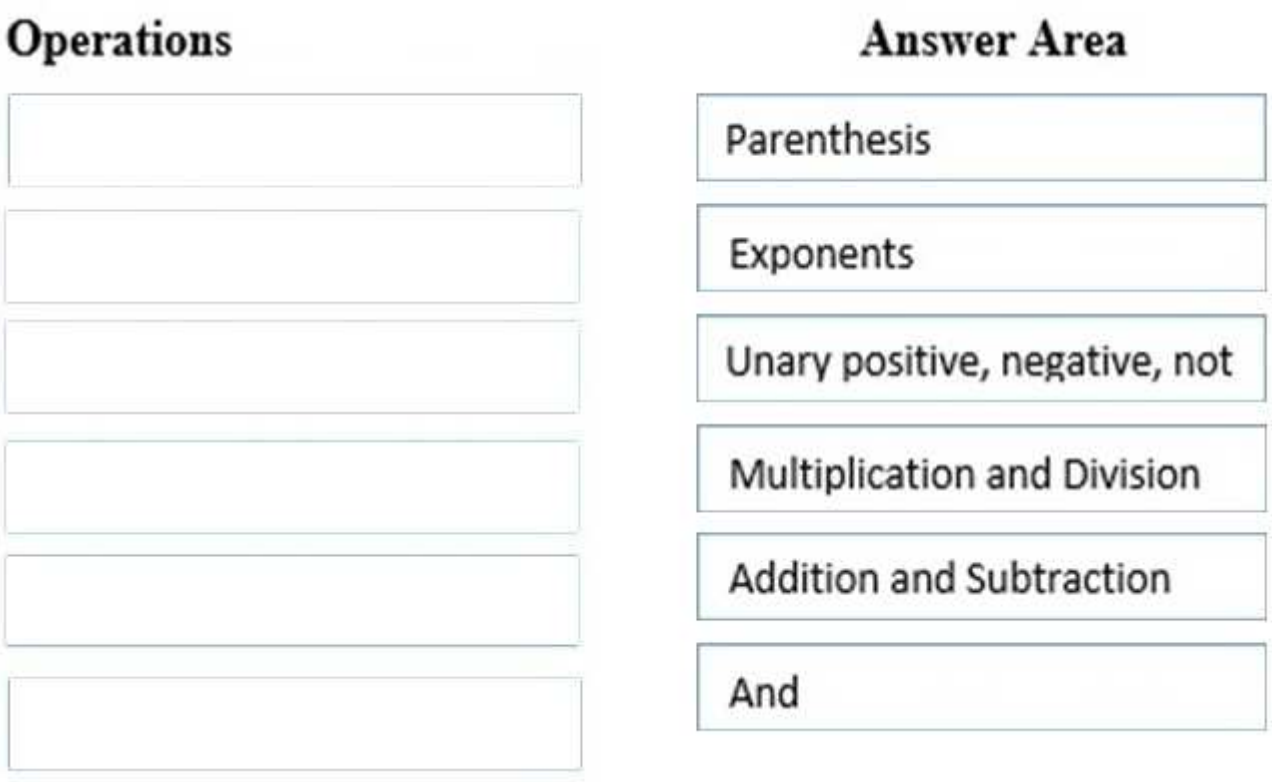
What is the correct order of operations for the six classes of operations ordered from first to last in order of precedence? To answer, move all operations from the

list of operations to the answer area and arrange them in the correct order.

Select and Place:



Correct Answer:



Section: (none)
Explanation

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

QUESTION 4
DRAG DROP

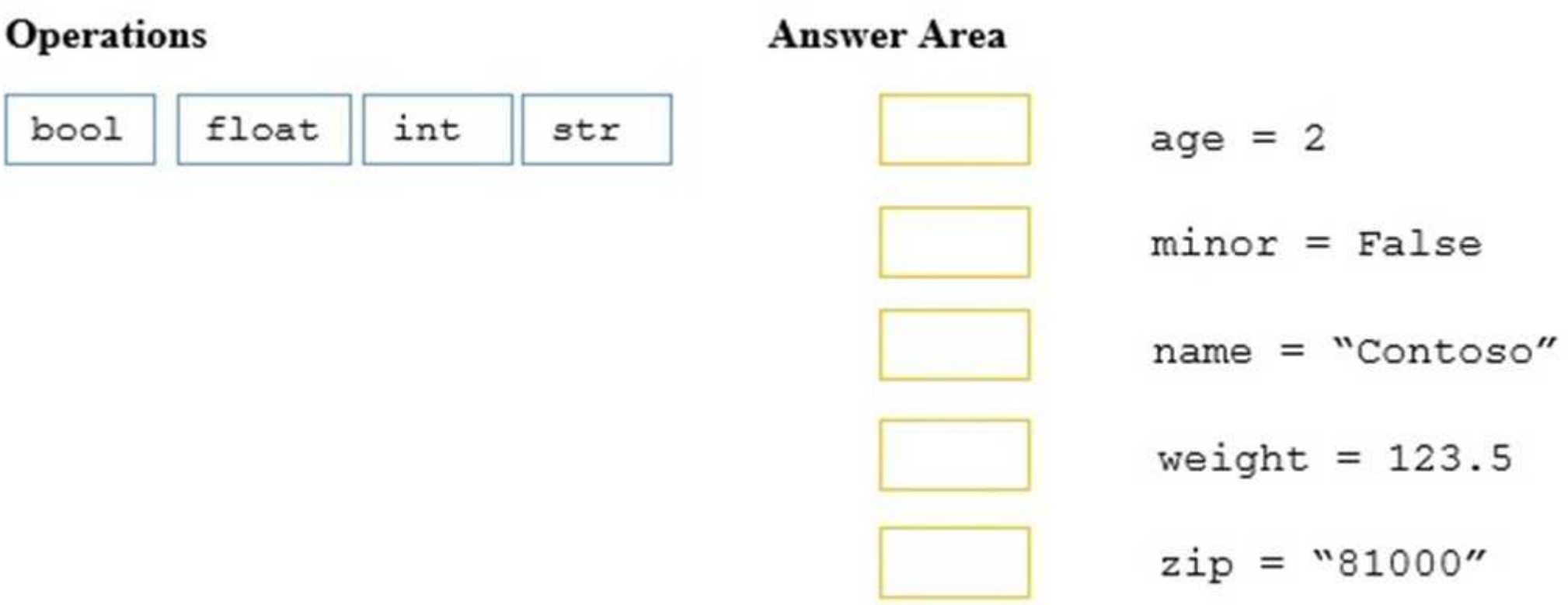
You are writing a Python program. The program collects customer data and stores it in a database.

The program handles a wide variety of data.

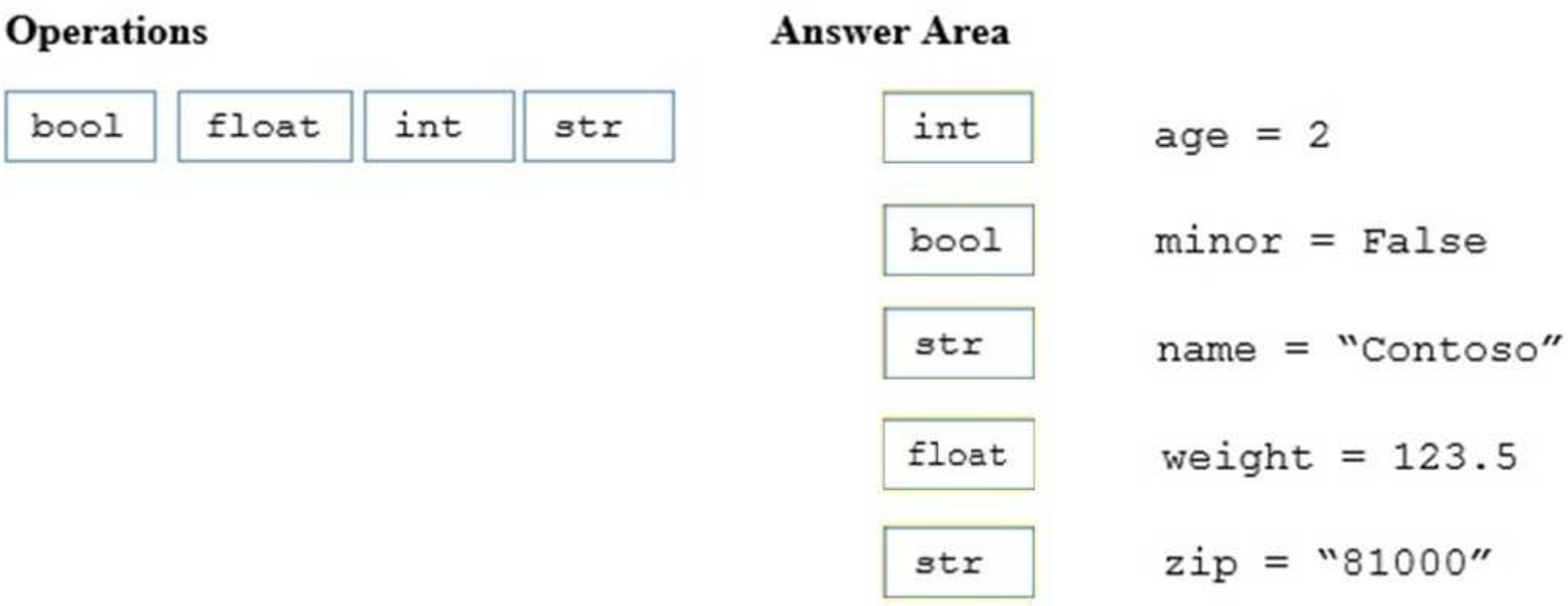
You need to ensure that the program handles the data correctly so that it can be stored in the database correctly.

Match the data type to the code segment. To answer, drag the appropriate data type from the column on the left to its code segment on the right. Each data type may be used once, more than once, or not at all.

Select and Place:



Correct Answer:



Section: (none)
Explanation

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

QUESTION 5
You are creating a Python program that shows a congratulation message to employees on their service anniversary.

You need to calculate the number of years of service and print a congratulatory message.

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

```
01 start = input("How old were you on your start date?")
02 end = input("How old are you today?")
03
```

You need to complete the program.

Which code should you use at line 03?

A. `print("Congratulations on" + (int(end)-int(start)) + "years of service!")`
B. `print("Congratulations on" + str(int(end)-int(start)) + "years of service!")`
C. `print("Congratulations on" + int(end - start) + "years of service!")`
D. `print("Congratulations on" + str(end - start)) + "years of service!")`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
int must be converted to string

QUESTION 6
DRAG DROP

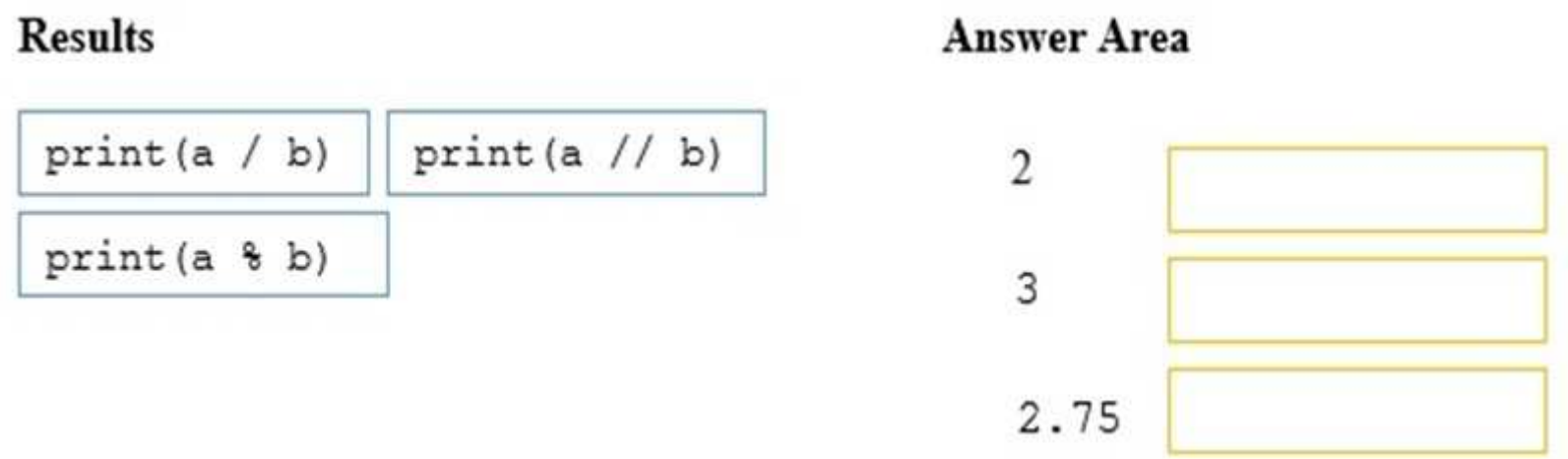
You are writing a Python program to perform arithmetic operations.

You create the following code:

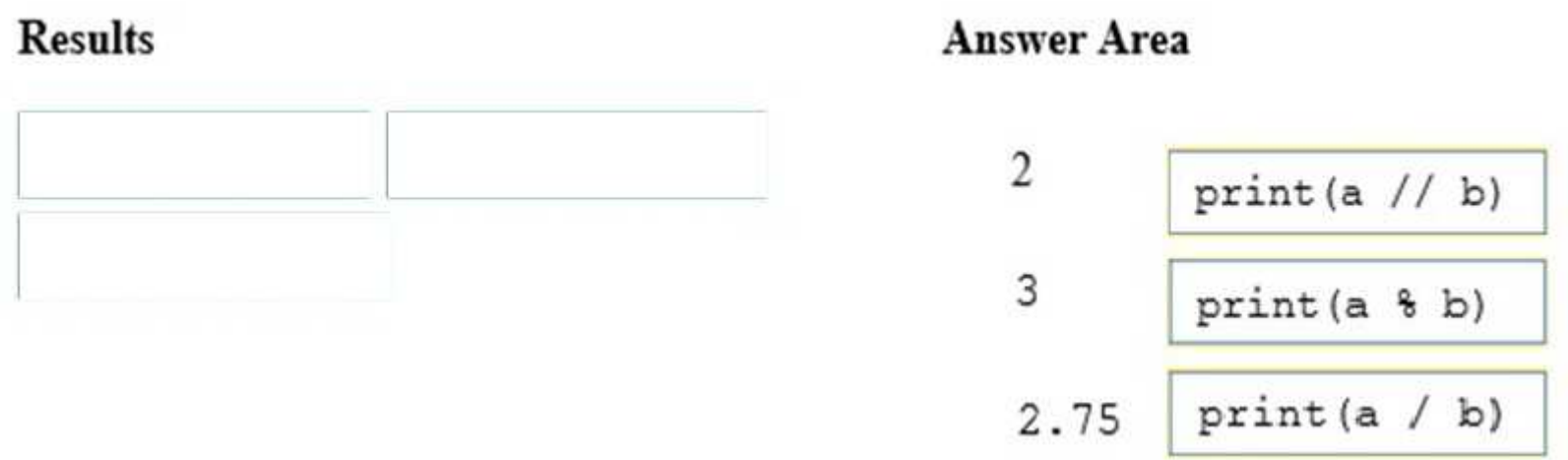

```
a = 11
b = 4
```

What is the result of each arithmetic expression? To answer, drag the appropriate expression from the column on the left to its result on the right. Each expression may be used once, more than once, or not at all.

Select and Place:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:
References: https://www.w3resource.com/python/python-operators.php

QUESTION 7
DRAG DROP

You are writing a Python program that evaluates an arithmetic formula.

The formula is described as b equals a multiplied by negative one, then raised to the second power, where `a` is the value that will be input and `b` is the result.

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

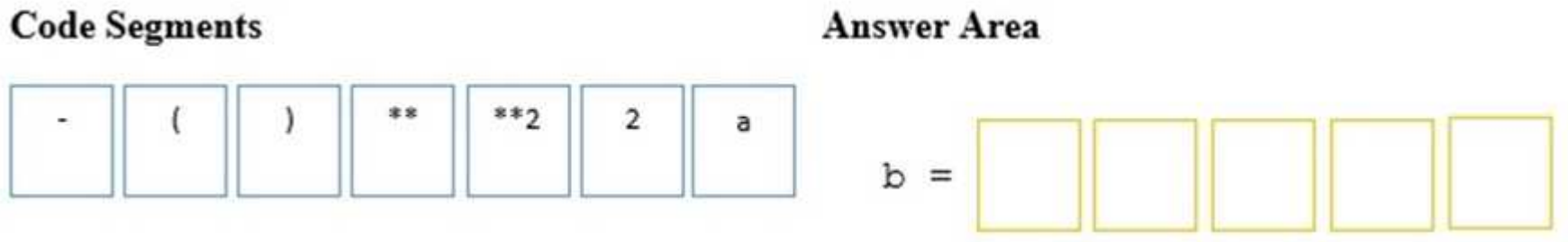
```
01 a = eval(input"Enter a number for the equation: "))
02 b =
```

You need to ensure that the result is correct.

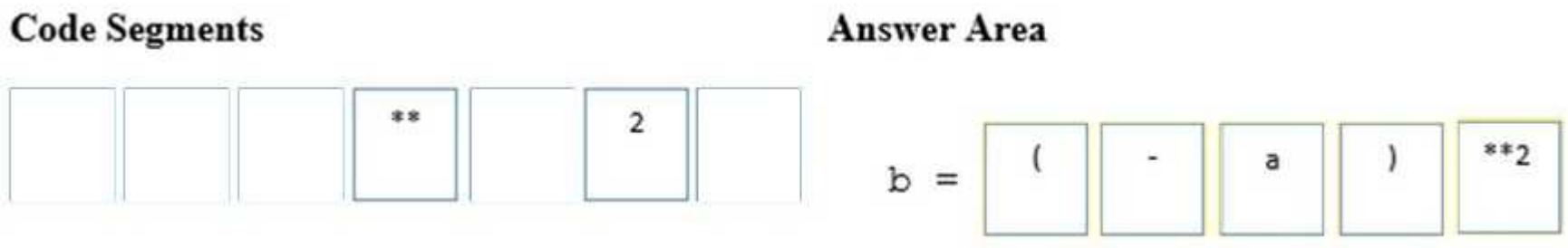
How should you complete the code on line 02? To answer, drag the appropriate code segment to the correct location. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:

QUESTION 8
Evaluate the following Python arithmetic expression:

```
(3*(1+2)**2 - (2**2)*3)
```

What is the result?

A. 3
B. 13
C. 15
D. 69

Correct Answer: C
Section: (none)
Explanation

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

QUESTION 9
You develop a Python application for your company.

A list named `employees` contains 200 employee names, the last five being company management. You need to slice the list to display all employees excluding

management.

Which two code segments should you use? Each correct answer presents a complete solution. (Choose two.)

A. `employees [1:-4]`
B. `employees [:-5]`
C. `employees [1:-5]`
D. `employees [0:-4]`
E. `employees [0:-5]`

Correct Answer: BE
Section: (none)
Explanation

Explanation/Reference:
References: https://www.w3resource.com/python/python-list.php#slice

QUESTION 10
HOTSPOT

You are an intern for ABC electric cars company. You must create a function that calculates the average velocity of their vehicles on a 1320 foot (1/4 mile) track. The output must be as precise as possible.

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

Hot Area:

Answer Area

```
#Speed calculator


distance = [ ] (input("Enter the distance traveled in feet"))
           int
           str
           float
distance_miles = distance/5280   #convert to miles

time = [ ] (input("Enter the time elapsed in seconds"))
       int
       float
       str
time_hours = time/3600  #convert to hours

velocity = distance_miles/time_hours

print("The average velocity is : ", velocity, " miles/hour")
```

Correct Answer:

Answer Area

```
#Speed calculator


distance = [int / str / float] (input("Enter the distance traveled in feet"))

distance_miles = distance/5280   #convert to miles

time = [int / float / str] (input("Enter the time elapsed in seconds"))

time_hours = time/3600  #convert to hours

velocity = distance_miles/time_hours

print("The average velocity is : ", velocity, " miles/hour")
```

Section: (none)
Explanation

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

QUESTION 11
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
Section: (none)
Explanation

Explanation/Reference:
Explanation:

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 12
You are writing an application that uses the `sqrt` function. The program must reference the function using the name `squareRoot`.

You need to import the function.

Which code segment should you use?

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A. `import math.sqrt as squareRoot`
B. `import sqrt from math as squareRoot`
C. `from math import sqrt as squareRoot`
D. `from math.sqrt as squareRoot`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
References: https://infohost.nmt.edu/tcc/help/pubs/python/web/import-statement.html

QUESTION 13
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
Section: (none)
Explanation

Explanation/Reference:

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

QUESTION 14
DRAG DROP

You are writing a function that works with files.

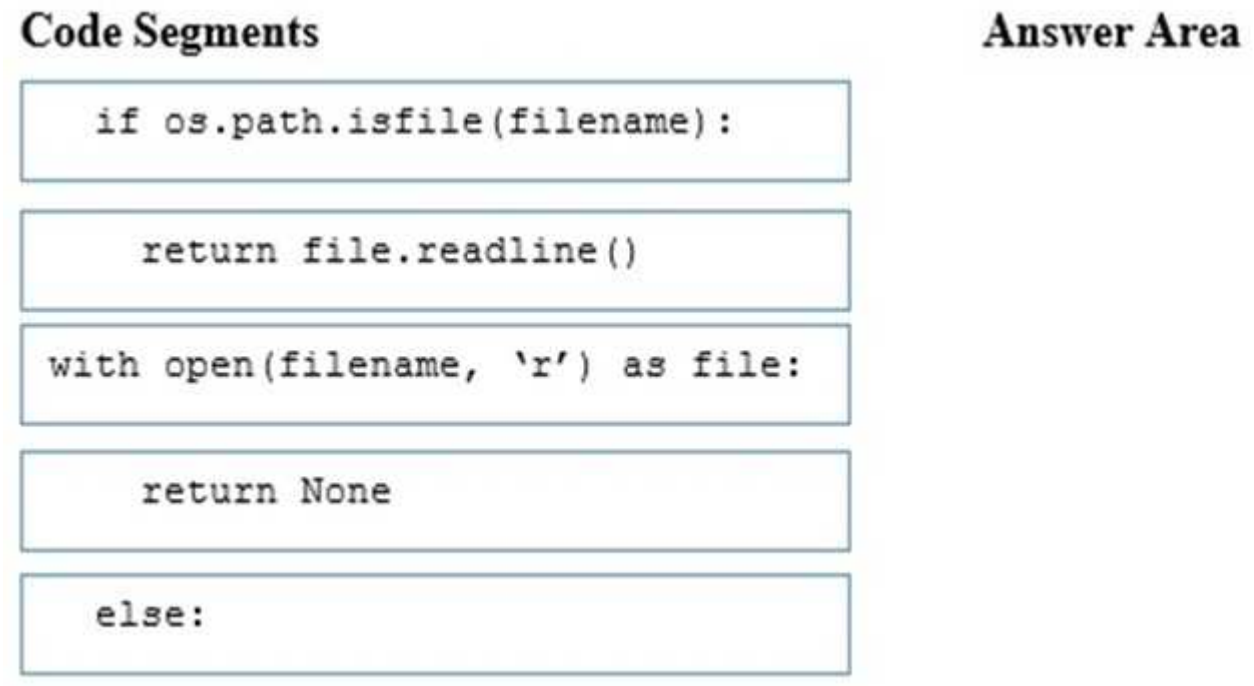
You need to ensure that the function returns None if the file does not exist. If the file does exist, the function must return the first line.

You write the following code:

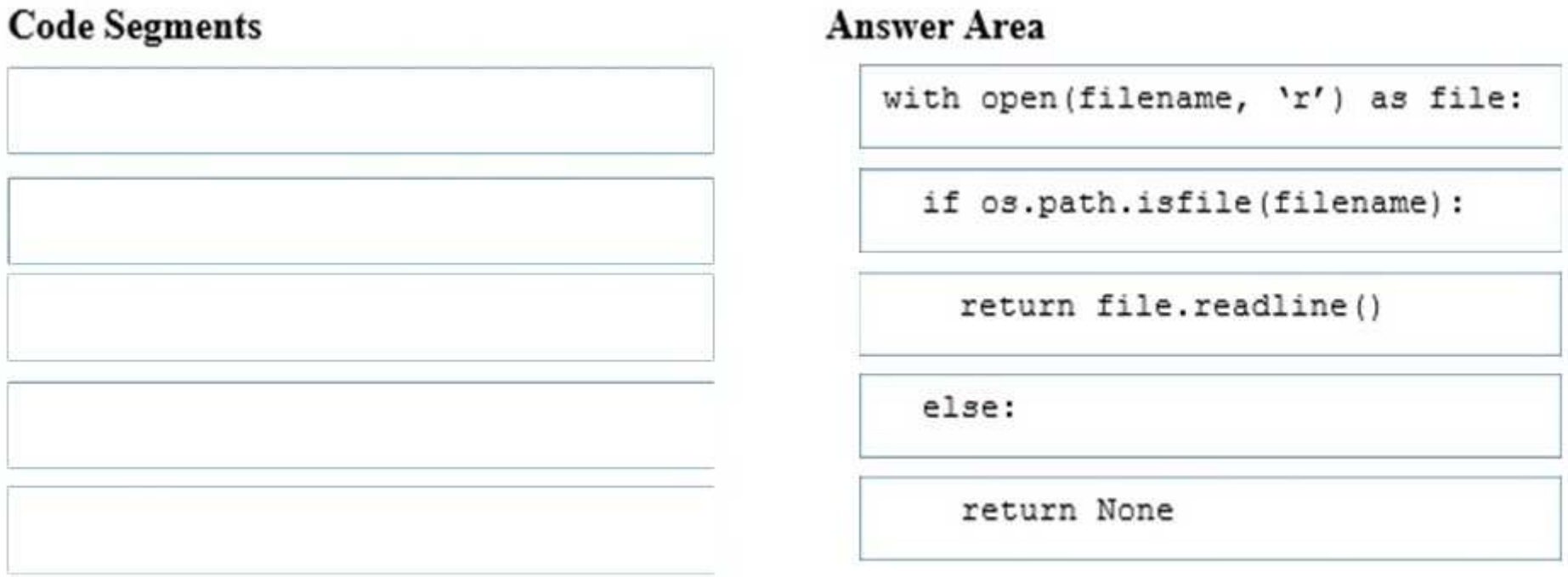
```
import os
def get_first_line(filename, mode):
```

In which order should you arrange the code segments to complete the function? To answer, move all code segments from the list of code segments to the answer area and arrange them in the correct order.

Select and Place:



Correct Answer:



Section: (none)
Explanation

Explanation/Reference:
Explanation:

References: http://effbot.org/zone/python-with-statement.htm

QUESTION 15
You are writing a Python program to automate inventory. Your first task is to read a file of inventory transactions. The file contains sales from the previous day, including the item id, price, and quantity.

The following shows a sample of data from the file:

```
10, 200, 5
20, 100, 1
```

The code must meet the following requirements:
- Each line of the file must be read and printed
- If a blank line is encountered, it must be ignored
- When all lines have been read, the file must be closed

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

```
01 inventory = open("inventory.txt", 'r')
02 eof = False
03 while eof == False:
04     line = inventory.readline()
05
06
07         print(line)
08     else:
09       print ("End of file")
10       eof = True
11       inventory.close()
```

Which code should you write for line 05 and line 06?

A.
```
05   if line != '\n':
06     if line != "":
```

B.
```
05   if line != '\n':
06     if line != None:
```

C.
```
05   if line != '':
06     if line != "":
```

D.
```
05   if line != '':
06     if line != "\n":
```

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
https://www.dotnetperls.com/readline-python

QUESTION 16
You develop a Python application for your company.

You need to accept input from the user and print that information to the user screen.

You have started with the following code. Line numbers are included for reference only.

```
01 print("What is your name?")
02
03 print(name)
```

Which code should you write at line 02?

A. `name = input`
B. `input("name")`
C. `input(name)`
D. `name = input()`

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 17
You develop a Python application for your school.

You need to read and write data to a text file. If the file does not exist, it must be created. If the file has content, the content must be removed.

Which code should you use?

A. `open("local_data", "r")`
B. `open("local_data", "r+")`
C. `open("local_data", "w+")`
D. `open("local_data", "w")`

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Explanation:
Modes 'r+', 'w+' and 'a+' open the file for updating (reading and writing). Mode 'w+' truncates the file.
References:
https://docs.python.org/2/library/functions.html
https://pythontips.com/2014/01/15/the-open-function-explained/

QUESTION 18
You are creating a function that reads a data file and prints each line of the file.

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

```
01 import os
02 def read_file(file):
03     line = None
04     if os.path.isfile(file):
05         data = open(file,'r')
06     while line != '':
07         line = data.readline()
08         print(line)
```

The code attempts to read the file even if the file does not exist.

You need to correct the code.

Which three lines have indentation problems? Each correct answer presents part of the solution. (Choose three.)

A. Line 01
B. Line 02
C. Line 03
D. Line 04
E. Line 05
F. Line 06
G. Line 07

H. Line 08

Correct Answer: FGH
Section: (none)
Explanation

Explanation/Reference:

QUESTION 19
This question requires that you evaluate the underlined text to determine if it is correct.

You write the following code:

```
import sys
try:
    file_in = open("in.txt", 'r')
    file_out = open("out.txt", 'w+')
except IOError:
    print('cannot open', file_name)
else:
    i = 1
    for line in file_in:
        print(line.rstrip())
        file_out.write("line " + str(i) + ": " + line)
        i = i + 1
    file_in.close()
    file_out.close()
```

The out.txt file does not exist. You run the code. The code will execute without error.

Review the underlined text. If it makes the statement correct, select “No change is needed”. If the statement is incorrect, select the answer choice that makes the statement correct.

A. No change is needed
B. The code runs, but generates a logic error
C. The code will generate a runtime error

D. The code will generate a syntax error

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
References: https://docs.python.org/2/library/exceptions.html

QUESTION 20
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
Section: (none)
Explanation

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

QUESTION 21
The ABC company is creating a program that allows customers to log the number of miles biked. The program will send messages based on how many miles the customer logs.

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

```
01
02      name = input("What is your name? ")
03      return name
04
05      calories = miles * calories_per_mile
07      return calories
08 distance = int(input("How many miles did you bike this week? "))
09 burn_rate = 50
10 biker = get_name()
11 calories_burned = calc_calories(distance, burn_rate)
12 print(biker, ", you burned about" ,calories_burned, "calories.")
```

You need to define the two required functions.

Which code segments should you use for line 01 and line 04? Each correct answer presents part of the solution? (Choose two.)

A. `01 def get_name():`
B. `01 def get_name(biker):`
C. `01 def get_name(name):`
D. `04 def calc_calories():`
E. `04 def calc_calories(miles, burn_rate):`
F. `04 def calc_calories(miles, calories_per_mile):`

Correct Answer: AF
Section: (none)
Explanation

Explanation/Reference:
References: https://www.w3resource.com/python/python-user-defined-functions.php