

In-Class Question 8

Question)

Chris wants to play a lottery game (again!).

Here is how the game works. The lottery game draws **six unique numbers randomly from 1 to 49**. Anyone who guesses all six drawn numbers correctly wins the jackpot.

But Chris is too lazy to guess the numbers so he has written a Python program to help him, which is shown below.

```
import random

# Add the 49 balls in a list
balls = []
for number in range(1, 50):

    balls._____

# For displaying the output
order = ["first", "second", "third", \
         "fourth", "fifth", "sixth"]

# Randomly draw the balls
for ball in range(6):

    # Draw a ball from the remaining balls

    index = random.randint(0, _____ )

    number = balls[index]

    balls._____

    print("The", order[ball], "number is", number)
```

Here is an example of running the program:

Example

The first number is 27
The second number is 3
The third number is 38
The fourth number is 40
The fifth number is 11
The sixth number is 34

You need to fill in the three blanks in the program so that it can work as described above.

Correct answer(s):

- First blank:

```
balls.append(number)
```

- Second blank:

```
index = random.randint(0, len(balls) - 1)
```

- Third blank:

```
balls.remove(number)
```

Explanation:

- For the first blank:
 - The objective is to add the numbers, from 1 to 49, to the `balls` list
 - One way is to simply add each number to the end of the list and therefore the `.append()` method can be used
 - Alternatively, you can also use the `.insert()` method to add each number, e.g. using `balls.insert(0, number)`
- For the second blank:
 - The objective is to randomly pick a number from the `balls` list
 - The index variable should contain the item index of the randomly picked number
 - Since the indices of the items in the list start from 0 to `len(balls)-1`, you should use `len(balls)-1` in the blank so that `random.randint()` covers the entire range of the indices
- For the third blank:
 - The objective is to remove the number that gets randomly picked so that the number will not be repeated later
 - That can be achieved by removing the number from the `balls` list and hence the use of the `.remove()` method