**1. What is the result of the code, and explain?**

**&gt;&gt;&gt; X = &#39;iNeuron&#39;**

**&gt;&gt;&gt; def func():**

**print(X)**

**&gt;&gt;&gt; func()**

**2. What is the result of the code, and explain?**

**&gt;&gt;&gt; X = &#39;iNeuron&#39;**

**&gt;&gt;&gt; def func():**

**X = &#39;NI!&#39;**

**&gt;&gt;&gt; func()**

**&gt;&gt;&gt; print(X)**

**3. What does this code print, and why?**

**&gt;&gt;&gt; X = &#39;iNeuron&#39;**

**&gt;&gt;&gt; def func():**

**X = &#39;NI&#39;**

**print(X)**

**&gt;&gt;&gt; func()**

**&gt;&gt;&gt; print(X)**

**4. What output does this code produce? Why?**

**&gt;&gt;&gt; X = &#39;iNeuron&#39;**

**&gt;&gt;&gt; def func():**

**global X**

**X = &#39;NI&#39;**

**&gt;&gt;&gt; func()**

**&gt;&gt;&gt; print(X)**

**5. What about this code—what’s the output, and why?**

**&gt;&gt;&gt; X = &#39;iNeuron&#39;**

**&gt;&gt;&gt; def func():**

**X = &#39;NI&#39;**

**def nested():**

**print(X)**

**nested()**

**&gt;&gt;&gt; func()**

**&gt;&gt;&gt; X**

**6. How about this code: what is its output in Python 3, and explain?**

**&gt;&gt;&gt; def func():**

**X = &#39;NI&#39;**

**def nested():**

**nonlocal X**

**X = &#39;Spam&#39;**

**nested()**

**print(X)**

**&gt;&gt;&gt; func()**

**SOLUTIONS**

1. *The output of the code would be:*

*INeuron*

*Explanation: In this code, the global variable* ***X*** *is assigned the string value* ***"iNeuron"****. The function* ***func*** *is then defined, which simply prints the value of* ***X****. When the function is called, it prints the value of* ***X****, which is* ***"iNeuron"****.*

1. *The output of the code would be:*

***NI!***

***INeuron***

*Explanation: In this code, the global variable* ***X*** *is assigned the string value* ***"iNeuron"****. The function* ***func*** *is then defined, which declares a new local variable* ***X*** *with the value* ***"NI!"****. When the function is called, it does not change the value of the global* ***X****. Then, after the function call, the value of the global* ***X*** *is printed, which is* ***"iNeuron"****.*

1. *The output of the code would be:*

***NI***

***INeuron***

*Explanation: In this code, the global variable* ***X*** *is assigned the string value* ***"iNeuron"****. The function* ***func*** *is then defined, which declares a new local variable* ***X*** *with the value* ***"NI"*** *and prints its value. When the function is called, it prints the value of the local* ***X****, which is* ***"NI"****. After the function call, the value of the global* ***X*** *is printed, which is* ***"iNeuron"***

1. *The output of the code would be:*

***NI***

*Explanation: In this code, the global variable* ***X*** *is assigned the string value* ***"iNeuron"****. The function* ***func*** *is then defined, which includes a* ***global*** *statement to reference the global variable* ***X*** *rather than declaring a new local variable. The value of* ***X*** *is then changed to* ***"NI"****. When the function is called, it changes the value of the global* ***X****. After the function call, the value of the global* ***X*** *is printed, which is* ***"NI"****.*

1. *The output of the code would be:*

***NI***

*Explanation: In this code, the global variable* ***X*** *is assigned the string value* ***"iNeuron"****. The function* ***func*** *is then defined, which declares a local variable* ***X*** *with the value* ***"NI"*** *and a nested function* ***nested****, which simply prints the value of* ***X****. When the function* ***func*** *is called, the nested function* ***nested*** *is defined, but it is not called. After the function call, the value of the global* ***X*** *is printed, which is* ***"iNeuron"****.*

1. *The output of the code would be:*

***Spam***

*Explanation: In this code, the function* ***func*** *is defined, which declares a local variable* ***X*** *with the value* ***"NI"*** *and a nested function* ***nested****. The nested function* ***nested*** *includes a* ***nonlocal*** *statement to reference the* ***X*** *declared in the enclosing scope of* ***func****, rather than declaring a new local variable. The value of* ***X*** *is then changed to* ***"Spam"****. When the function* ***func*** *is called, it calls the nested function* ***nested****, which chang*es the value of **X**