

Question 1: Create a NumPy Array

Problem:

Create a NumPy array with the elements 5, 10, 15, 20, 25 and print the array.

Solution:

```
import numpy as np

arr = np.array([5, 10, 15, 20, 25])
print(arr)
```

Expected Output:

```
[ 5 10 15 20 25]
```

Question 2: Element-wise Operations

Problem:

Given two arrays `arr1 = [1, 2, 3]` and `arr2 = [4, 5, 6]`, add them together using NumPy and print the result.

Solution:

```
import numpy as np

arr1 = np.array([1, 2, 3])
arr2 = np.array([4, 5, 6])

result = arr1 + arr2
print(result)
```

Expected Output:

```
[5 7 9]
```

Question 3: Reshape an Array

Problem:

Create a NumPy array with the elements 1, 2, 3, 4, 5, 6 and reshape it into a 2x3 matrix. Print the reshaped array.

Solution:

```
import numpy as np

arr = np.array([1, 2, 3, 4, 5, 6])
reshaped_arr = arr.reshape(2, 3)
print(reshaped_arr)
```

Expected Output:

```
[[1 2 3]
 [4 5 6]]
```

Question 4: Slicing an Array**Problem:**

Given an array `arr = [10, 20, 30, 40, 50]`, slice the array to extract the elements 20, 30, 40 and print the sliced array.

Solution:

```
import numpy as np

arr = np.array([10, 20, 30, 40, 50])
sliced_arr = arr[1:4]
print(sliced_arr)
```

Expected Output:

```
[20 30 40]
```

Question 5: Broadcasting Operation

Problem:

Create a NumPy array with the elements 2, 4, 6, 8 and multiply each element by 3 using broadcasting. Print the resulting array.

Solution:

```
import numpy as np

arr = np.array([2, 4, 6, 8])
result = arr * 3
print(result)
```

Expected Output:

```
[ 6 12 18 24]
```