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```
0s Question 1:
Addition:
[[12 14 16]
 [18 20 22]
 [24 26 28]]
Subtraction:
[[-10 -10 -10]
 [-10 -10 -10]
 [-10 -10 -10]]
Multiplication:
[[ 11  24  39]
 [ 56  75  96]
 [119 144 171]]
Division:
[[0.09090909 0.16666667 0.23076923]
 [0.28571429 0.33333333 0.375      ]
 [0.41176471 0.44444444 0.47368421]]
Modulo:
[[1 2 3]
 [4 5 6]
 [7 8 9]]
Power:
[[          1          4096          1594323]
 [ 268435456 30517578125 2821109907456]
 [232630513987207 18014398509481984 1350851717672992089]]
Square Root:
[[1.          1.41421356 1.73205081]
 [2.          2.23606798 2.44948974]
 [2.64575131 2.82842712 3.          ]]
```

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```
0s [2.64575131 2.82842712 3.          ]]
Transpose:
[[1 4 7]
 [2 5 8]
 [3 6 9]]
Horizontal Stack:
[[ 1  2  3 11 12 13]
 [ 4  5  6 14 15 16]
 [ 7  8  9 17 18 19]]
Vertical Stack:
[[ 1  2  3]
 [ 4  5  6]
 [ 7  8  9]
 [11 12 13]
 [14 15 16]
 [17 18 19]]
Array Equality:
False
```



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Question 2:

Multiplied Matrix:

```
[[ 5 10 15]
 [20 25 30]]
```

Question 3:

Array 2D (Shape: 5x3):

```
[[ 1  2  3]
 [ 4  5  6]
 [ 7  8  9]
 [10 11 12]
 [13 14 15]]
```

Array 2D (Shape: 3x5):

```
[[ 1  2  3  4  5]
 [ 6  7  8  9 10]
 [11 12 13 14 15]]
```

Question 4:

Three-Dimensional Array (Shape: 2x3x3):

```
[[[ 1  2  3]
   [ 4  5  6]
   [ 7  8  9]]
```

```
 [[10 11 12]
  [13 14 15]
  [16 17 18]]]
```

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Question 5:

Range Array (Shape: 3x5):

```
[[ 1  2  3  4  5]
 [ 6  7  8  9 10]
 [11 12 13 14 15]]
```

Question 6:

Restricted Range Array (Shape: 3x5):

```
[[ 1  2  3  4  5]
 [ 6  7  8  9 10]
 [11 12 13 14 15]]
```

Question 7:

Are the Arrays Equal?
True

Question 8:

Standard Normal Array (Shape: 3x4):

```
[[-0.99533427 -0.42141391  0.84034273 -1.12352513]
 [ 1.73846614  0.23449239 -1.36646531 -0.30431753]
 [ 1.11752251 -1.00207891 -0.21531209  0.57080516]]
```

Question 9:

Copy Array (Shape: 3x4):

```
[[-0.99533427 -0.42141391  0.84034273 -1.12352513]
 [ 1.73846614  0.23449239 -1.36646531 -0.30431753]
 [ 1.11752251 -1.00207891 -0.21531209  0.57080516]]
```



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```
▶ Question 10:
Random Integer Array (Shape: 3x3):
[[9 3 1]
 [3 9 2]
 [2 1 4]]

Question 11:
Random 1D Array (Size: 10):
[ 4 10  2 10 10  3  1  4  6  5]

Question 12:
Random 2D Array (Shape: 3x3):
[[0.69433794 0.14209327 0.40865143]
 [0.71807961 0.77378659 0.32055383]
 [0.19700666 0.9151281  0.40354572]]

Question 13:
Constant Array (Shape: 4x4):
[[7 7 7 7]
 [7 7 7 7]
 [7 7 7 7]
 [7 7 7 7]]

Question 14:
Array 1D:
[1 2 3 4 5 6 7 8 9]
```

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```
▶ Question 15:
Zeros Array (Shape: 3x5):
[[0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0.]]

Question 16:
Ones Array (Shape: 3x5):
[[1. 1. 1. 1. 1.]
 [1. 1. 1. 1. 1.]
 [1. 1. 1. 1. 1.]]

Question 17:
Range Array (Shape: 3x5):
[[ 1  2  3  4  5]
 [ 6  7  8  9 10]
 [11 12 13 14 15]]
Maximum Value:
15
Minimum Value:
1
Total:
120
Mean:
8.0
Median:
8.0
Variance:
18.666666666666668
Standard Deviation:
4.320493798938574
```

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```
Variance:
18.666666666666668
Standard Deviation:
4.320493798938574
Number of Rows:
3
Number of Columns:
5
Unique Values:
[ 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15]
Counts of Unique Values:
[1 1 1 1 1 1 1 1 1 1 1 1 1 1 1]

Question 18:
Number of Rows:
3
Number of Columns:
5

Question 19:
Unique Values:
[ 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15]
Counts of Unique Values:
[1 1 1 1 1 1 1 1 1 1 1 1 1 1 1]
```