NumPy Cheat Sheet

1. Importing NumPy

```
import numpy as np
```

2. Creating Vectors

```
vector = np.array([1, 2, 3])
```

3. Creating Matrices

```
matrix = np.array([[1, 2, 3], [4, 5, 6]])
```

4. Basic Vector Operations

```
vector_sum = vector1 + vector2
vector_diff = vector1 - vector2
vector_product = vector1 * vector2
```

5. Dot Product

```
dot_product = np.dot(vector1, vector2)
```

6. Norm (Magnitude)

```
magnitude = np.linalg.norm(vector)
```

7. Angle Between Vectors

```
cos_theta = np.dot(A, B) / (np.linalg.norm(A) * np.linalg.norm(B))
angle = np.arccos(cos_theta) * (180 / np.pi)
```

8. Projection of One Vector onto Another

```
projection = (np.dot(A, B) / np.dot(B, B)) * B
```

9. Cross Product (For 3D Vectors)

```
cross_product = np.cross(A, B)
```

10. Checking Linear Dependence

```
if np.all(A / B == (A / B)[0]): print("Linearly Dependent")
```