In [6]:
```
import numpy as np
x = np.array([1, 2, 3, 5])
N = 3
np.vander(x, N)
```

Out[6]:
```
array([[ 1,  1,  1],
       [ 4,  2,  1],
       [ 9,  3,  1],
       [25,  5,  1]])
```

In [7]:
```
np.column_stack([x**(N-1-i) for i in range(N)])
```

Out[7]:
```
array([[ 1,  1,  1],
       [ 4,  2,  1],
       [ 9,  3,  1],
       [25,  5,  1]], dtype=int32)
```

In [9]:
```
x = np.array([1, 2, 3, 5])
np.vander(x)
```

Out[9]:
```
array([[  1,   1,   1,   1],
       [  8,   4,   2,   1],
       [ 27,   9,   3,   1],
       [125,  25,   5,   1]])
```

In [10]:
```
np.vander(x, increasing=True)
```

Out[10]:
```
array([[  1,   1,   1,   1],
       [  1,   2,   4,   8],
       [  1,   3,   9,  27],
       [  1,   5,  25, 125]])
```

In [11]:
```
 np.linalg.det(np.vander(x))
```

Out[11]:
```
48.00000000000003
```

In [ ]:
```

```