

# Solution: NumPy Final Exercise

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

(2) b = a.astype(float)

(3) a = np.arange(11, dtype=int)

(4) a = np.linspace(0,23,7)

(5) a = np.ones((2,5,1,5,2,1))*5.0

(6) a = np.squeeze(a)
    print(a.shape)

(7) c = a.reshape((10,10))

(8) a = np.arange(10)
    b = np.arange(5)
    a[5:] = b[5::-1]

(9) a = np.random.normal(loc=21.,scale=4.5,size=(3,3,12,3))

(10) print(a.mean())
     print(a.std())
     print(a.var())
     print(a.max())
     print(a.min())

(11) print(a.mean(1))
     print(a.std(1))
     print(a.var(1))
     print(a.max(1))
     print(a.min(1))

(12) a = a.flatten()

(13) b = a[(a>15)&(a<26)]

(14) b = a.clip(15,26)
     b[b==15] = np.NaN
     b[b==26] = np.NaN

(15) print(np.nansum(b))

(16) print(b.mean())

(17) c = np.nan_to_num(b)

(18) np.savetxt('lastarray.gz',c)
     c_loaded = numpy.loadtxt('lastarray.gz')
```