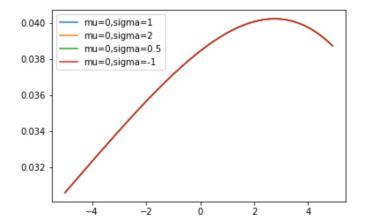
```
In [6]: def mean num friends(x):
            sum = 0
            for i in x:
                sum = sum + i
            return sum/len(x)
        def median num friends(x):
            x.sort()
            mid = round(len(x)/2)
            if(len(x) % 2 == 0):
                return (x[mid] + x[mid-1])/2
            else:
                return (x[mid-1])
        num friends=[100, 49, 41, 40, 25, 10, 5, 4, 7, 20, 60]
        print("mean={}".format(mean_num_friends(num_friends)))
        print("median={}".format(median num friends(num friends)))
        mean=32.818181818182
```

mean=32.81818181818182 median=25

```
In [23]: def normal_pdf(x, mu=0, sigma=1):
    import math
    mean = mean_num_friends(num_friends)
    med = median_num_friends(num_friends)
    var = pow(x - mean,2) / (len(num_friends)-1)
    return (1/math.sqrt(2*math.pi*var))*math.exp(-pow(x-mu,2)/(2*var))

from matplotlib import pyplot as plt
    xs = [x / 10.0 for x in range(-50, 50)]
    plt.plot(xs, [normal_pdf(x, sigma=1) for x in xs], '-', label='mu=0, sigma=1')
    plt.plot(xs, [normal_pdf(x, sigma=2) for x in xs], '-', label='mu=0, sigma=2')
    plt.plot(xs, [normal_pdf(x, sigma=0.5) for x in xs], '-', label='mu=0, sigma=0.5')
    plt.plot(xs, [normal_pdf(x, sigma=-1) for x in xs], '-', label='mu=0, sigma=-1')
    plt.legend()
    plt.show()
```



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