In [29]:
```python
from fractions import Fraction as frac
def avg_dist(n):
    c=0                # sum of distances
    p =0               # total number of values for a single point
    for i in range(n):     # for each point in the line
        for j in range(n):  # all distances from the particular point
            c += abs(i-j)
        p+=1                    # counter for values of a point, number of input values
    print(c/(p*n),end=" ")   # hence total number of inputs are p x n
    print("i.e. "+str(frac(c,p*n)))


avg_dist(3)
avg_dist(5)
avg_dist(100)
avg_dist(2)
avg_dist(4318)
```

```
0.888888888888888 i.e. 8/9
1.6 i.e. 8/5
33.33 i.e. 3333/100
0.5 i.e. 1/2
1439.3332561371005 i.e. 6215041/4318
```

In [ ]: