And here is the mean μ_y (mu) and standard deviation σ_y (sigma) of our population:

```
                          Age
-------------------------------------------------------------
      Percentiles      Smallest
 1%           18             18
 5%           19             18
10%           20             18       Obs                1109
25%           21             18       Sum of Wgt.        1109

50%           24                      Mean           26.39405 ←μy (mu)
                        Largest       Std. Dev.      7.079283 ← σy (sigma)
75%           30             52
90%           37             54       Variance       50.11625
95%           41             55       Skewness       1.295218
99%           49             59       Kurtosis       4.393614
99%           50             59       Kurtosis       4.452734
```

And here is the mean $\bar{y}$ *(y-bar)* and standard deviation s of our sample of size 25:

```
                          Age
-------------------------------------------------------------
      Percentiles      Smallest
 1%           18             18
 5%           19             19
10%           21             21       Obs                  25
25%           23             21       Sum of Wgt.          25

50%           26                      Mean              28.36 ← ȳ (y-bar)
                        Largest       Std. Dev.      7.169844 ← s
75%           35             38
90%           39             39       Variance       51.40667
95%           41             41       Skewness       .4979002
99%           42             42       Kurtosis       2.004631
```

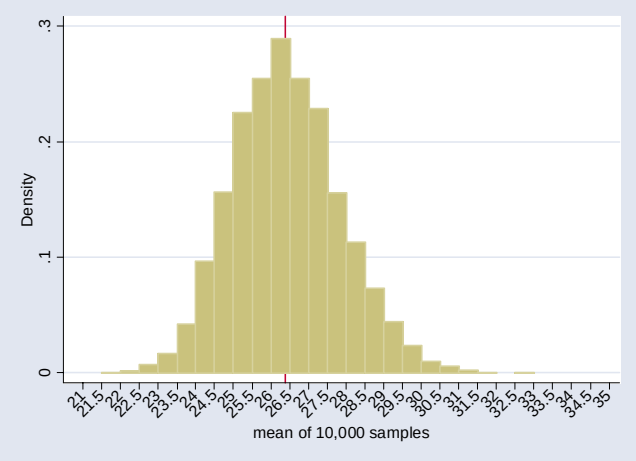
the actual 25 values

24 27 23 36 25 26 26 19 34 18 28 39 35 21 29 23 36 28 41 38 42 21 24 21 25

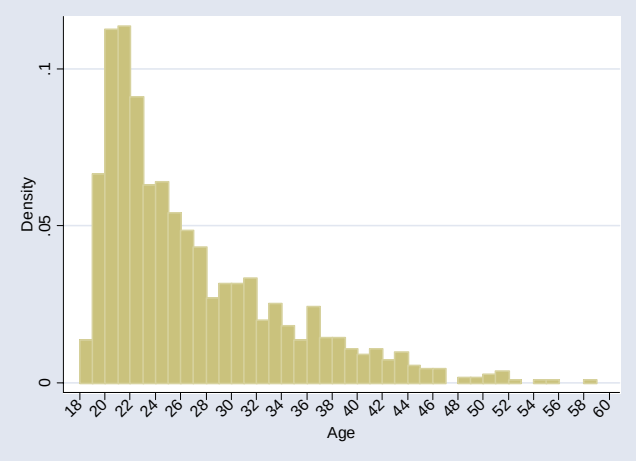
```
10,000 means of the variable age from 10,000 samples of size 25
-------------------------------------------------------------
      Percentiles      Smallest
 1%         23.36          21.68
 5%          24.2          22.24
10%         24.64       22.29167       Obs               10000
25%          25.4          22.32       Sum of Wgt.       10000

50%         26.32                      Mean           26.39871 ← μ_Ȳ
                        Largest       Std. Dev.      1.417049 ← σ_Ȳ
75%         27.32          31.44
90%         28.28           31.5       Variance       2.008029
95%         28.84           31.8       Skewness       .2502371
99%         29.92          32.52       Kurtosis       3.016403
```

Histogram of our “population of samples” (10,000 samples all of size 25)



Histogram of the original population:



Histogram of our sample of size 25