SOC 5050: Lab-02

Standard Deviation by Hand

x_i	$\bar{x}$	$x-\bar{x}$	$(x-\bar{x})^2$
587000	666100	-79100	6,256,810,000
706600	666100	40500	1,640,250,000
625300	666100	-40800	1,664,640,000
680000	666100	13900	193210,000
634000	666100	-32100	1,030,410,000
700000	666100	33900	1,149,210,000
722000	666100	55900	3,124,810,000
657000	666100	-9100	82,810,000
683000	666100	16900	285,610,000

$\Sigma(x-\bar{x}) = 0$ $\quad \Sigma(x-\bar{x})^2 = 15427760000$

$n = 9$

$\bar{x} = 666100$

$$s^2 = \frac{\Sigma(x_i-\bar{x})^2}{n-1}$$

$$s^2 = \frac{15,427,760,000}{9-1}$$

$$s^2 = 1,928,470,000$$

$$s = \sqrt{s^2}$$

$$s = \sqrt{1,928,470,000}$$

$$s = 43,914,35$$

$$\bar{x} = \frac{\Sigma(x_i)}{n}$$

$$\bar{x} = \frac{587000 + 706600 + 625300 + 680000 + 634000 + 700000 + 722000 + 657000 + 683000}{9}$$

$$\bar{x} = \frac{5994900}{9}$$

$$\bar{x} = 666100$$