3830 Pb dist 1973

0, 4, 16, 37, 64, 79, 80, 92, 94, 151, 167
.5 1 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5

149, 112, 53 | ~~48~~ 675
6.0 6.5 7.0

$\bar{X} = \frac{5235}{1098} = 4.77$

$\bar{X}$ of $f \times X_i$

$S =$

3870 + 3910 Pb dist

1, 3, 17, 49, 82, 97, 77, 78, 74, 72
.5 1 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

87, 68, 41,
5.5 6.0 6.5 7.0

$\bar{X} = \frac{3050.5}{746} = 4.09$

3870 + 3910 + 3830

$\bar{X} = \frac{8285.5}{1844} = 4.49$

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

$$\bar{x} = \frac{\Sigma f_i x_i}{\Sigma f_i}$$

$$s = \sqrt{\frac{\Sigma f \, \Sigma f d^2 - (\Sigma f d)^2}{\Sigma f(\Sigma f - 1)}}$$

$$= \sqrt{1098}$$

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

$$= \Sigma f_i (x_i^2 - 2x_i\bar{x} + \bar{x}^2)$$

$$= \Sigma f_i x_i^2 - 2x_i \frac{\Sigma f_i x_i}{\Sigma f_i}$$

$$- 2\bar{x}\Sigma f_i x_i + \bar{x}^2 \Sigma f_i$$

$$= \Sigma f_i x_i^2 - 2\frac{\Sigma f_i x_i}{\Sigma f_i}\Sigma f_i x_i + \frac{(\Sigma f_i x_i)^2}{\Sigma f_i}$$

$$= \sqrt{\frac{\Sigma f_i x_i^2 - \frac{(\Sigma f_i x_i)^2}{\Sigma f_i}}{\Sigma f_i - 1}}$$

3
3