

Key

Math 150 Quiz 10

1. An assembly-line machine turns out washers with the following thicknesses (in millimeters):

1.20 1.01 1.25 2.20
2.05 1.46 1.90 2.03
1.64 2.19 2.25 2.08

Find the mean and standard deviation of these thicknesses.

mean:

$$\bar{x} = \frac{1.2 + 1.01 + 1.25 + 2.2 + 2.05 + 1.46 + 1.9 + 2.03 + 1.64 + 2.19 + 2.25 + 2.08}{12}$$

$$= \frac{21.26}{12} = 1.77$$

standard deviation:

| x | $x - \bar{x}$ | $(x - \bar{x})^2$ |
|------|---------------|-------------------|
| 1.2 | -.57 | .32 |
| 1.01 | -.76 | .58 |
| 1.25 | -.52 | .27 |
| 2.2 | .43 | .18 |
| 2.05 | .28 | .08 |
| 1.46 | -.31 | .10 |
| 1.9 | .13 | .02 |
| 2.03 | .26 | .07 |
| 1.64 | -.13 | .02 |
| 2.19 | .42 | .18 |
| 2.25 | .48 | .23 |
| 2.08 | .31 | .10 |

$$\text{Total} = 2.15$$

$$s = \sqrt{\frac{2.15}{12-1}} = \sqrt{\frac{2.15}{11}} = \sqrt{.20} = .44$$