

The median is  $\frac{1}{2} \times (91 + 93) = 92$

The 25% trimmed mean is  $\frac{1}{25} \times (\frac{1}{2} \times 65 + \frac{1}{2} \times 141 + 67 + 68 + 71 + 74 + 76 + 78 + 79 + 81 + 84 + 85 + 89 + 91 + 93 + 96 + 99 + 101 + 104 + 105 + 105 + 112 + 118 + 123 + 136 + 159)$   
 $= 87.2$

The 10% trimmed mean is  $\frac{1}{40} \times (36 + 39 + 49 + 47 + 50 + 59 + 61 + 63 + 67 + 68 + 71 + 74 + 76 + 78 + 79 + 81 + 84 + 85 + 89 + 91 + 93 + 96 + 99 + 101 + 109 + 105 + 105 + 112 + 118 + 123 + 136 + 139 + 141 + 148 + 158 + 161 + 168 + 184 + 206 + 248)$   
 $= 102.25$

The 10% trimmed mean > The sample median > The 25% trimmed mean

44. a. The range is from 26.3 to 49.3

$$b. \bar{x} = \frac{1}{10} \times (29.3 + 49.3 + 30.6 + 28.2 + 28.0 + 26.3 + 33.9 + 29.4 + 23.5 + 31.6) \\ = \frac{1}{10} \times 282.3 = 28.23$$

$$s^2 = \frac{1}{10-1} [(29.3 - 28.23)^2 + (49.3 - 28.23)^2 + (30.6 - 28.23)^2 + (28.2 - 28.23)^2 + (28.0 - 28.23)^2 \\ + (26.3 - 28.23)^2 + (33.9 - 28.23)^2 + (29.4 - 28.23)^2 + (23.5 - 28.23)^2 + (31.6 - 28.23)^2] \approx 232.43$$

c. The sample standard deviation is  $s = \sqrt{s^2} \approx 15.25$

$$d. s^2 = \frac{1}{n-1} \sum (x_i - \bar{x})^2 = \frac{s_x}{n-1} = \frac{\sum x_i^2}{n-1} - \frac{(\sum x_i)^2}{n} \approx 232.43$$