

- 1) Find the mean, median and mode of the price data. For 2 and 3, Without a calculator, find the range, quartiles, inter-quartile range, variance, and standard deviation for the temperature data. **SHOW YOUR WORK!!**

MAC makeup prices	
Product	Price (\$)
Eye Shadow	36
Mascara	11
Lip Gloss	14
Foundation	26.50
Compact	27
Powder	21
Blush	17.50
Eyeliners	12.50
Lipstick	14.00
Lip Liner	12.50
Concealer	14.50

$$\text{Mean} = \$18.70$$

$$\text{Median} = \$14.50$$

$$\text{Mode} = \$12.5, \$14$$

- 2) A high school basketball team scores the following numbers of points in a series of games:
53, 61, 54, 46, 65, 73, 62

$$\text{Range} = 73 - 46 = 27 \text{ points}$$

$$\text{Median} = 61 \text{ points}$$

$$Q1 = 53, Q2 = 61, Q3 = 65$$

$$\text{IQR} = 65 - 53 = 12 \text{ points}$$

$$\text{Mean} = 59.1 \text{ points}$$

$$\text{Variance} = 67.8 \text{ points}$$

$$\text{Standard Deviation} = 8.2 \text{ points}$$

- 3) The ages of the employees of Business X are as follows:

44, 25, 17, 28, 50, 58, 38, 19, 61

$$\text{Range} = 61 - 17 = 44 \text{ years}$$

$$\text{Median} = 38 \text{ years}$$

$$Q1 = 22, Q2 = 38, Q3 = 54$$

$$\text{IQR} = 54 - 22 = 32 \text{ years}$$

$$\text{Mean} = 37.8 \text{ years}$$

$$\text{Variance} = 242.17 \text{ years}$$

$$\text{Standard Deviation} = 15.6 \text{ years}$$

For Problems 4 - 6, use your calculators to find the mean and standard deviation of the data.

4)

Ipod sales	
Year	Number Sold
2002	376,000
2003	937,000
2004	4,416,000
2005	22,497,000
2006	39,409,000
2007	51,630,000
2008 (proj.)	65,326,000

$$\text{Mean} = \bar{X} = 26,370,143 \text{ ipods}$$

$$\text{Standard Deviation} = \sigma_X = 24,334,446 \text{ ipods}$$

5)

Weekend Gross Income of Top Movies (Feb 20, '08)	
Movie Title	Millions (\$)
Jumper	27.354
The Spiderwick Chr.	19.004
Step up 2 the Streets	18.908
Fool's Gold	12.909
Definitely, Maybe	9.764
Welcome Home Rosco Jenkins	8.497
Juno	4.612
The Bucket List	3.991
Hannah Montana	3.263

$$\text{Mean} = \bar{X} = \$12.03$$

$$\text{Standard Deviation} = \sigma_X = \$7.79$$

6)

Average ACT Scores by State		
State	Compos.	Math
Arizona	21.5	21.6
California	21.6	22.1
Colorado	20.3	20
Delaware	21.5	21.4
Wash. DC	17.8	17.5
Hawaii	21.7	22.5
Idaho	21.3	20.9
Illinois	20.3	20.2
Kentucky	20.3	19.8
Maryland	20.8	20.6
Mass.	22.4	22.3
Michigan	21.4	21.1
Mississippi	18.8	18.9
Nebraska	21.7	21.5
New Hamp.	22.5	22.1
New York	22.3	22.4
Ohio	21.4	21.1
Oregon	22.5	22.4
Pennsylvania	21.8	21.5
Tennessee	20.5	19.7
Texas	20.2	20.3
Utah	21.5	20.9
Washington	22.5	22.1

Composite Mean =

$$\bar{X} = 21.16$$

Composite Standard Deviation =

$$\sigma_X = 1.32$$

Math Mean =

$$\bar{X} = 21$$

Math Standard Deviation =

$$\sigma_X = 1.2$$

