

Measures of central tendency - data in the middle

Measures of Dispersion-how the data is spread out

Measures of Position-look at where the scores sit in the set of data

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If you want to compare scores from one test to another, you need to see how you compare to the entire group.

**z-scores** - converting values into a standard scale

$$z = \underline{x} - \overline{x}$$

Think of the scores similar to standard deviations +/-1, +/-2, and +/-3, etc.

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Ex 1b) Which person is relatively taller Michael Jordan verses Rebecca Lobo?

Mike = 78 inches tall men's  $\overline{x} = 69$ , s = 2.8

Rebecca = 76 inches tall women's  $\bar{x} = 63.6$ , s = 2.5

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Ex1) If you took a test in English and got a 85 Band you took a test in Stats and got 80 C, which test did you do better on?

If I told you that the  $\bar{x}$  on the English test was a 92 B+ and s = 2, and the  $\bar{x}$  on the math test was a 79 C and s = 5, would you change your mind and why?

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Ex1) English z-score vs Math z-score

English test you got a 85 with a class mean of a 92 B+ with s=2

Math test you got an 80 with a class mean of 79 C with s = 5.

Which test did you do relatively better on?

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Range Rule of Thumb-"unusual" values are more than +/-2 units from the mean.

Ordinary scores:  $-2 \le x \le 2$ 

Unusual scores: z < -2 or z > 2

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Ex 2a)Were Michael and Rebecca's heights unusual?

Ex 2b) Is Mugsy Bogues' height unusual, if he is 5 ft 3 inches tall?

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1 Is Mrs. Schnowske's
height of 5ft unusal for a
women ?
Yes
No

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Ex 2c) If a women has a z-score of 1.5, what is her height?

<u>Quartiles</u> or <u>fractiles</u> are where the data is partitioned into approximately equal parts.

On a lot of the state testing, your results are in percentile ranking.

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Percentile =  $\frac{\text{\# of values less than } x}{\text{total values in the data set}}$ 

Open your book to page 87

Ex 3a) Find the perctile that corresponds w/ 0.8143.

Ex 3b) Find the percentile for a can that weights 0.8161.

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When given the percentile ranking and want to find the score use this formula.

$$L = \underbrace{k}_{100} \bullet n$$

k = percentile ranking

n = total # values in the set of data

If L=a decimal round it up and it tells how many scores to count in the set of data. If it is a whole number, find the average of that number and the next consecutive number in the set of data.

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Ex 4a) Find the weight that would be in 25th percentile or  $P_{25}$ .

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Ex 4b) Find P<sub>45</sub>?

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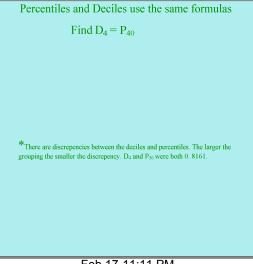
1 Find the percentile for a coke can that weighs 0.8194.

Round to the nearest percent.

2 Find the Coke can that is in the 50th Percentile.

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Interquartile range or  $IQR = Q_3 - Q_1$ Semi interquartile range =  $Q_3 - Q_1$  $Midquartile = Q_{\underline{3}} + Q_{\underline{1}}$ Feb 18-7:52 PM

## Figure Quartiles just like percentiles: $E_X)P_{25} = Q_1, P_{50} = Q_2, P_{75} = Q_3$

Q<sub>1</sub>= Seperates the bottom 25% of the sorted values from the top 75%

 $Q_2$  = median of the set of data. Divides the top and bottom 50%.

 $Q_3$  = Separates the bottom 75% from the top 25%.

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2 Find Q<sub>3</sub> from the Coke Table:

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