

(A) Lesson Objectives

- a. Compare dispersions of samples with different means and different standard deviations
- b. Investigate the effect of (i) outliers and (ii) constant changes to a data set

(B) Conclusions Resulting from Data Set Analysis

Here are some results from the Dec exams for my two sections on IM3: Ultimately, I would like to have an idea about which class is “better”

CASE #1 →	Mean from Class A = 85% Median from Class A = 84%	Mean from Class B = 84% Median from Class B = 86%
CASE #2 →	Range of scores from Class A = 50%	Range of scores for class B = 40%
CASE #3 →	Std Dev of scores from Class A = 6.5%	Std Dev of scores from Class B = 8.1%
CASE #4 →	you tell me what “summaries” you would like to know & why you want to know them ...	

(C) Effect of Outliers in a Data Set:

Example Problem: For my 2 sections of my IM3 classes, the results from December exams were: (NOTE: that I would like to ultimately know which class is “better”)

Class A → 78, 74, 66, 66, 77, 77, 79, 74, 78, 75.

Class B → 76, 75, 68, 66, 65, 77, 78, 73, 78, 26.

For each class, determine the mean, median, variance and standard deviation. Which measures are most affected by outliers.

(D) “Constant Changes” in a Data Set:

Example Problem #1: For one section of my IM3 classes, the results from December exams were:

Class A → 78, 74, 66, 66, 77, 77, 79, 74, 78, 75.

Mr. S decides that the scores should all be increased by 20 marks.

- (a) PREDICT what the new mean, median, variance and std dev should be. Explain the WHY behind your predictions.
- (b) Use your TI-84 to find the new mean, median, variance and std dev. Were your predictions correct?

Example Problem #2: A manufacturing company has the following daily production levels for 10 consecutive days of production:

58, 53, 56, 66, 47, 57, 57, 64, 48, 45.

Management decides that production levels need to be **tripled**.

- (a) PREDICT what the new mean, median, variance and std dev should be. Explain the WHY behind your predictions.
- (b) Use your TI-84 to find the new mean, median, variance and std dev. Were your predictions correct?

Example Problem #3: A manufacturing company has the following daily production levels for 10 consecutive days of production:

58, 53, 56, 66, 47, 57, 57, 64, 48, 45.

Management decides that production levels need to be **increased by 50%**.

- (a) PREDICT what the new mean, median, variance and std dev should be. Explain the WHY behind your predictions.
- (b) Use your TI-84 to find the new mean, median, variance and std dev. Were your predictions correct?

Example Problem #4: Mr Duggan has compiled data for the number of tardies from SEM 1 from 10 members of our current Seniors class

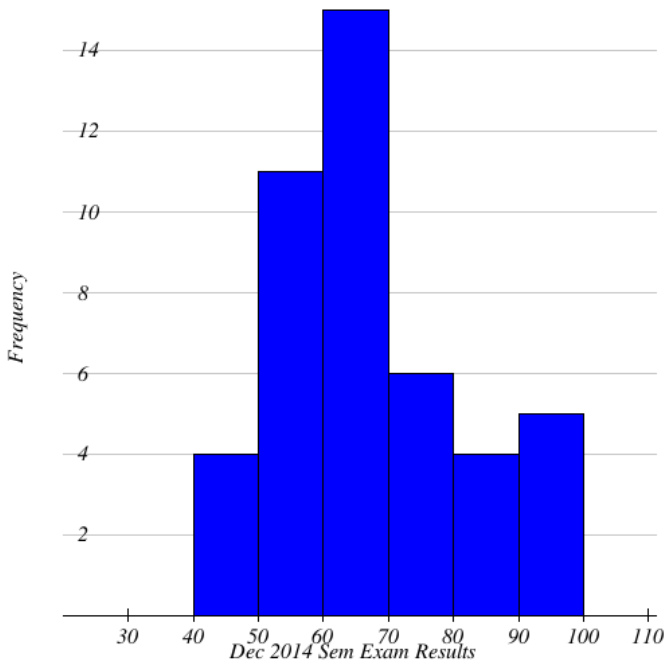
18, 14, 16, 16, 17, 20, 19, 14, 18, 17.

Mr. D. decides that tardies need to be **decreased by 50%**.

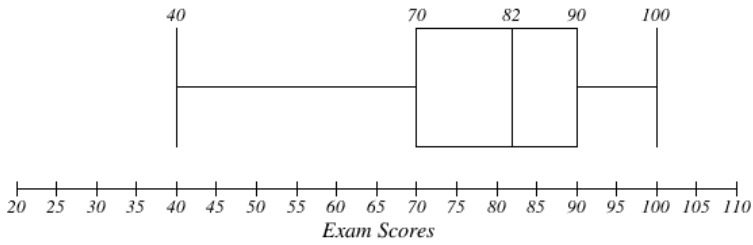
- (a) PREDICT what the new mean, median, variance and std dev should be. Explain the WHY behind your predictions.
- (b) Use your TI-84 to find the new mean, median, variance and std dev. Were your predictions correct?

Lesson 29 – Working With Standard Deviation – DAY 2

Which class had the “best” results?



Dec 2015 Sem Exam Scores



Dec 2016 Dec Exam Scores

