

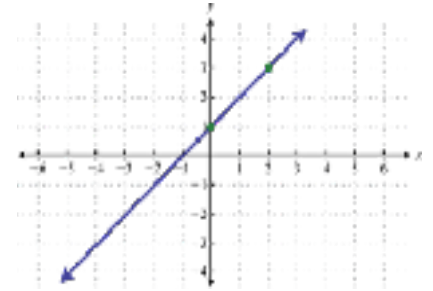
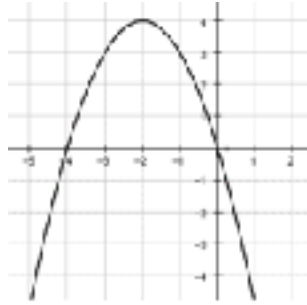
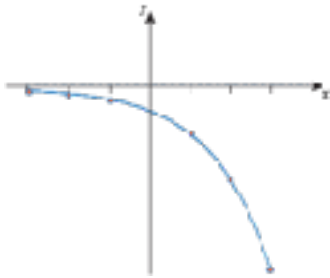
Unit 7 Test Review Summary of the notes

What you need to know:

1. Recognize/Identify a linear, quadratic, and exponential function from one of three representations:

A. Equations: Linear: $y = ax + b$; Exponential: $y = a(b)^x$; Quadratic: $y = ax^2 + bx + c$

B. Graphs:



C. Data Set Tests:

Linear Test: **1st Difference of y's = constant**

Quadratic Test: **2nd Difference of y's = constant**

Exponential Test: **1st Difference of y's = orig. "y" values in data set**

OR each orig "y" value is a multiple by same factor {100, 10, 1, 1/10, 1/100}

2. **Identify the best function $f(x)$ {quadratic, linear, or exponential} to fit a set of data.**

Use calculator to enter in "x" and "y" lists for use in regression calculations.

Model of best fit using regression calculations to identify function with correlation coefficient $r^2 = 1$ or closest to 1

Identify write the equation of best fit model

Answer questions of prediction using the correct equation:

- when given x value to predict y, enter value for x into equation

-when given y value to predict time or x to reach y,
look for the y value on the 2nd graph (table) on calculator.

3. **Know how to use calculator adjustments for Window, Zoom**

Know how to set up calculator for

Reset of L's: **stat set up editor**

2nd y= statplot enter

2nd 0 catalog diagnostics done

Trace/Graph

Reset 2nd + 712, then turn on plots, and diagnostics

Know Stat Plot adjustments for histogram, data points, modified box plot

Know how to use Xmin, Xmax, Ymin, Ymax

Know how to navigate Stat Calc for different data lists L1, L2, L3

4. **Displaying Data sets graphically using Histograms, Dot Plots, Box Plots**

Statistics are used to describe and predict, Graphs and Calculations are the tools used to make these descriptions and predictions available to business people, politicians, educators, engineers, and scientists for their use in their applications.

5. Describing Data Distribution S. O. C. S.

Shape: Symmetric, Skewed Left, Skewed Right

Outliers: These are extreme values.

Be able to identify them by calculating: **IQR, then IQR(1.5), 5 Num Summary**

Exact outliers can be identified when there is a {data set}

Compare the data set such that:

Outliers are {data element(s)} are $< Q1 - IQR(1.5)$

and/or are {data element(s)} are $> Q3 + IQR(1.5)$

Center: Center of measures for exact data sets are

Mean (average of all the data elements)

Median (middle data element of the data set)

when no data set is present and just reading a histogram, find the best center and stack bars to estimate an even split of the data given between two numbers.

(eyeballing it)

Spread: the span of the data what does it run from and to...0-100...then 100-0 is 100, that's using **Range = max - min or upper extreme - lower extreme**

HOWEVER

when Median is best measure of Center,

use IQR for Spread = $Q3 - Q1$ = upper quartile - lower quartile

when Mean is best measure of Center,

use standard deviation or = spread from the calculator

Be able to write complete sentences describing SOCS. Be sure to include numbers and comparisons especially when comparing data sets using double box plots. You will have a minimum of four sentences to write when describing data distribution

6. Histograms:

Bars Touch

Intervals do not overlap and must be the same width

Label title, x axis, and Y axis

Xaxis is always the interval or what the data is measuring, quiz grades, height, etc.

Y axis is always the frequency, the number of students getting that grade, having that height, etc.

7. Dot Plots:

Number line spreads from lowest number of data set to highest even if there is no data element over the number on number line it must be present as a mark.

Label the title of the box plot

Label below the number line what the numbers represent...what they are measuring

The y axis is not present as frequency as each dot is indicating the frequency above the measure on the number line it represents.

8. Box Plots:

Draw Modified Box Plots, on Double Box Plots

use same number line, label each Box Plot separately off to the left with a title indicating the different box plot

Five Number Summary

Upper Extreme	Max
Lower Extreme	Min
Lower Quartile	Q1
Upper Quartile	Q3
Second Quartile	Q2
Median	Q2

Percentages on a Box Plot Answering questions comparing data sets

Adjusting Box Plot to next highest /lowest value w/outliers at Max and Min