

Suffield Public Schools Summer Review

For Students Entering

Statistics

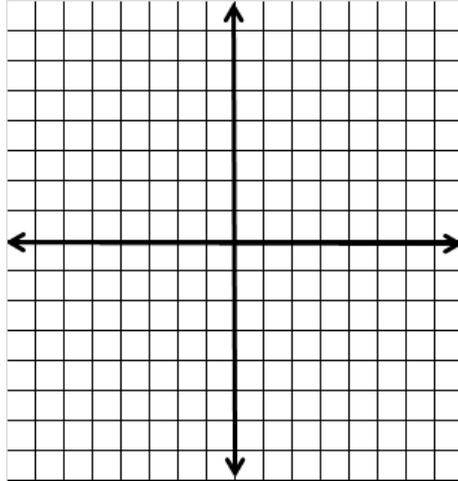
For additional help, you can find online tutorials on specific math concepts and skills at:

<http://www.khanacademy.org/>

<http://www.math.com/>

I. Graph the following equation.

1) $y = -2x + 3$



II. Given $f(x) = 4x + 2$ and $g(x) = 3x^2$, find the following:

2) $f(-3)$

3) $g(-3)$

4) $f(g(-1))$

5) $g\left(f\left(\frac{3}{x}\right)\right)$

III. Solve each inequality for x.

6) $0.05 < 2.5\sqrt{\frac{0.6}{x}}$

7) $0.01 \geq 1.78\sqrt{\frac{.5(.5)}{x}}$

IV. Solve for n. Round to the nearest tenth.

8) $0.05 = 1.96\left(\frac{7.9}{n}\right)$

9) $22.8 = \frac{64.7 - n^3}{n^3}$

10) $13 - \sqrt{3n^2 + 1} = 12.5$

V. Answer the questions based on the given scenario.

11) You have an equally likely chance of rolling any value on each of two dice. Find the probability of the given event.

a. rolling a sum of either 7 or 9.

c. rolling a 6 on exactly one die.

b. rolling a sum greater than 5.

d. rolling doubles.

12) There are three language classes that the 200 high school students can take: Spanish, French, and Latin. 121 students take Spanish, 40 students take French, 28 students take Latin, 3 students take both Latin and Spanish, 4 students take both French and Latin, 2 students take both Spanish and French, and 1 student takes all three classes.

- a. Draw a Venn diagram to represent this information.
- b. What is the probability that a student selected at random will take Spanish only?
- c. What is the probability that a student selected at random takes none of these languages?
- d. What is the probability that a student selected at random takes Latin but not French?

13) Thirty-five students in an AP Statistics class took a test: 9 received A's, 18 received B's, and 8 received C's.

- a. If a student from the class is chosen at random, what is the probability that the student did not receive a C?
- b. If the teacher randomly chooses 3 test papers, what is the probability that the teacher chose tests with grades A, B, and C in that order?

VI. Answer the following questions and determine if the data is quantitative or qualitative (categorical).

	Answer	Type
14) In what grade did you take Algebra 1?	_____	_____
15) How many music downloads do you have?	_____	_____
16) What is your zip code?	_____	_____
17) Choose a random integer from 1 to 20.	_____	_____
18) How many siblings do you have?	_____	_____
19) Who is your favorite teacher?	_____	_____
20) How tall are you in inches?	_____	_____
21) How many AP classes will you be taking this year?	_____	_____
22) What gender are you?	_____	_____
23) How many miles per gallon does your car get on the highway?	_____	_____
24) How long have you lived in the house you currently live in?	_____	_____
25) How much time do you spend on homework each not on average?	_____	_____

VII. Use the data to answer the questions that follow.

26) This is a list of parent's ages at the time their sons were born.

Dad:	41	27	23	31	30	33	26	32	43	25	34
	27	25	34	27	26	28	32	32	35	27	33
	34	34	34	35							
Mom:	29	26	23	30	28	33	23	32	38	23	35
	24	24	33	24	23	24	32	23	30	24	29
	34	35	26	31							

a. Find the mean and median for the Dad data.

Mean _____ Median _____ Which is larger?

b. Find the mean and median for the Mom data.

Mean _____ Median _____ Which is larger?

c. Compare the two means you calculated. Which is larger? _____

Is this what you expected? Explain why or why not.

d. Calculate the ranges for both sets of data. Dad _____ Mom _____

Why might these values be different? Explain.

e. Find the minimum, quartile 1, median, quartile 3, and maximum. (Remember, each quartile contains 25% of the data) for both data sets:

Dad: Minimum _____ Q1 _____ Median _____ Q3 _____ Maximum _____

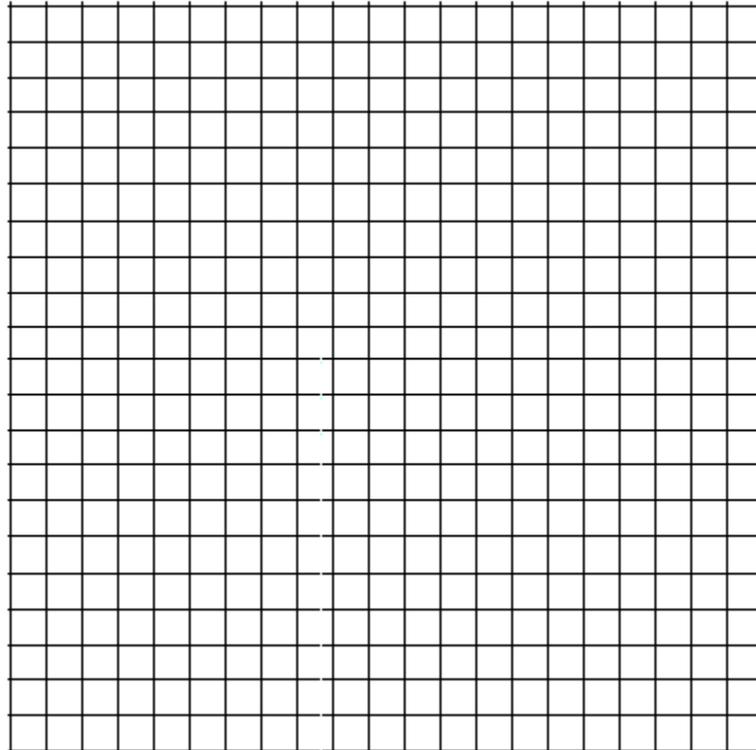
Mom: Minimum _____ Q1 _____ Median _____ Q3 _____ Maximum _____

Compare these two data sets. What conclusions can you make about these two data sets? Explain.

27) The following data is the number of jump shots made in 25 attempts from various distances.

Distance from basket (ft)	25	15	10	20	15	5	10	5	25
Jump shots made	6	10	15	7	9	18	12	20	5

a. Make a scatterplot of the distance from basket vs. jump shots made data. Be sure to label the axes with numbers and words.



b. What type of correlation does the graph have (positive, negative, or none)?

c. Write an algebraic model of the data (equation of the line of best fit).

d. According to your model, estimate the distance away from the basket that will result in zero jump shots being made.

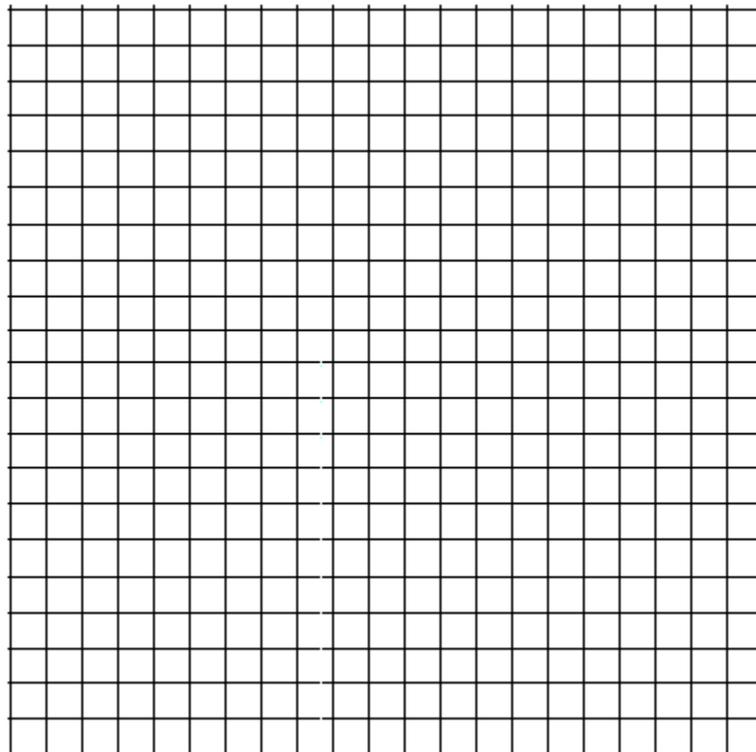
28) The scores on an Algebra final were 90, 86, 78, 82, 96, 100, and 45.

a. create a boxplot (box and whisker plot) for this data, including all necessary labels.

b. create a stemplot (stem and leaf plot) for this data, including a key.

29) Twelve students were surveyed concerning their summer plans. Four students will be taking a summer class. Three students will be working. Three students will be taking a family vacation. Two students will be watching TV all summer.

a. create a bar graph for this data, including all necessary labels.



b. create a pie chart for this data, including all necessary labels/key.

30) Go to www.gapminder.org and select “Gapminder World” from the tabs listed at the top. This scatterplot should load:



This is worldwide data of Life Expectancy vs. Per Capita Income. Point the cursor at the x-axis or y-axis labels to get more information about these variables. Every colored circle on the graph represents a country. Point the cursor at various circles and the name of the country will appear. The size of each circle is proportion to that country’s population. The lower right corner will show the country’s population as the cursor is pointed at it. Slide the year indicator back to the first year that data was recorded (1800 for this combination of variables) and click on “Play” in the lower left hand corner. This will change the scatterplot, year by year, to show the change made over time.

- What is the relationship between Per Capita Income and Life Expectancy in the world?
- Which countries are farthest from the pattern (outliers) shown by the rest of the world in 2012?
- Which countries have the highest and lowest life expectancy in 2012?
- Which countries have the highest and lowest per capita incomes in 2012?
- Which group of countries (by color) has gained most since 1950 relative to the rest of the world in both income and life expectancy?
- Watch the track of Germany from 1800 – 2010. What events in Germany might explain the unusual changes that happened twice in Germany?