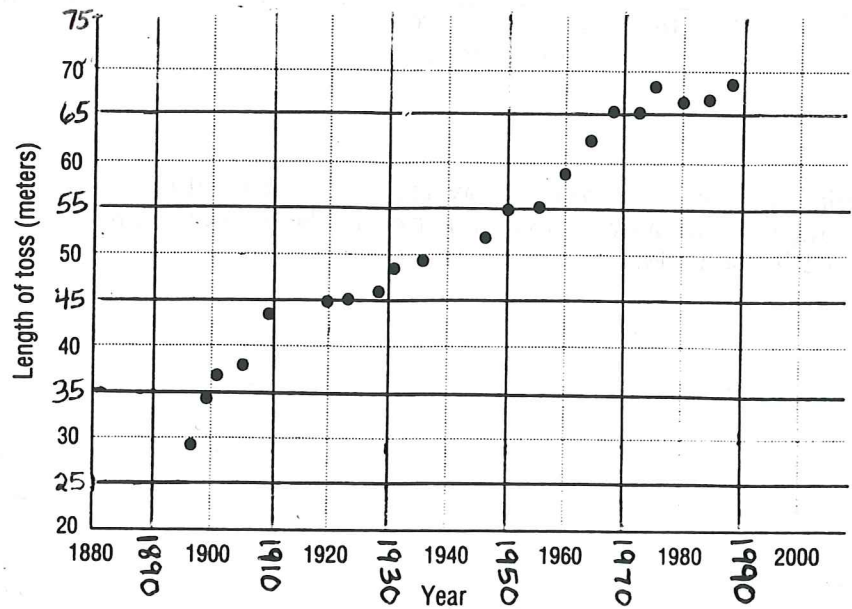


Algebra I
5.1 Classwork #2
Lines of Best Fit

NAME: _____
DATE: _____ HOUR: _____

- Objectives: Determine if a scatterplot approximates a linear relationship.
Find the slope of a line of best fit using graphed data.
Use a line of best fit to make predictions.

1. The length of the winning toss in the men's discus throw has shown a steady increase since the first Olympics in 1896. The scattergram below shows the winning tosses in meters.



Year	Length of toss (m)
1896	29
1899	34
1902	37
1905	38
1909	44
1920	45
1924	45

Year	Length of toss (m)
1928	46
1932	48
1938	49
1948	52
1950	55
1956	55
1960	58

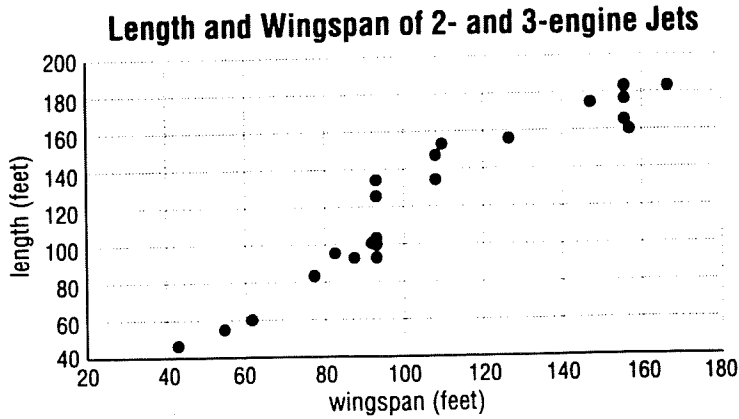
Year	Length of toss (m)
1964	62
1968	65
1972	65
1976	68
1980	66
1984	66
1988	68

- Graph a line of best fit that goes through at least **two** data points.
- Find the coordinates of **two** data points on your line from the table.
 (\quad , \quad) (\quad , \quad)
- Estimate the slope of your line of best fit using your two data points.
- Predict the winning toss for 2000 from your line of best fit.

Circle the data points in the table.

2.

The scattergram below illustrates the wingspan and length of 2-engine and 3-engine jet planes.

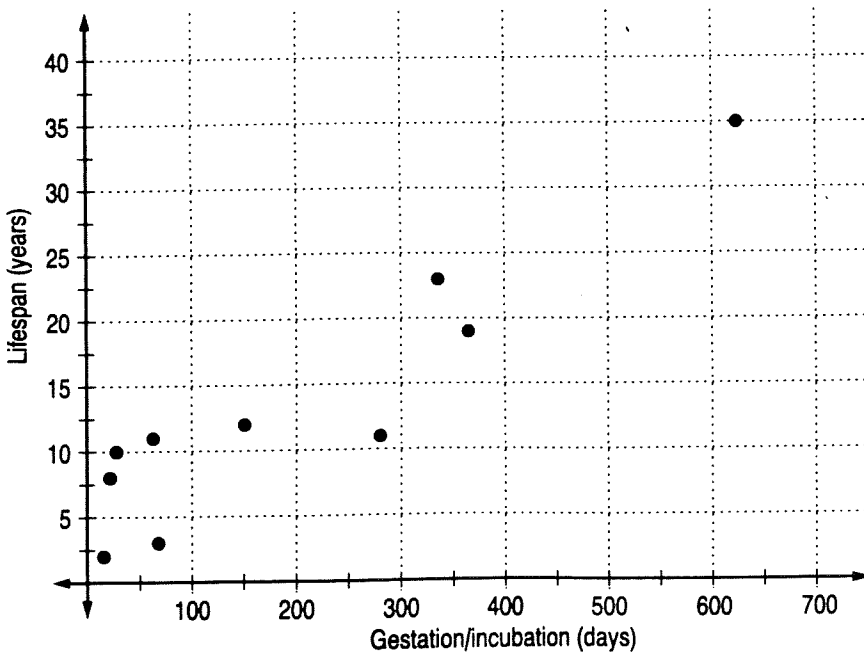


a. Draw a line to fit the data and estimate the coordinates of two points on it.

b. Find the slope of your line.

c. From the scattergram, about what length would you expect a jet to be if its wingspan is 100 feet?

3. Below is a scattergram of the average life spans and the average gestation or incubation period of the various animals listed in the table.



Animal	Average gestation or incubation (days)	Expected life span (years)
mule	365	19
cat	63	11
chicken	22	8
cow	280	11
dog	63	11
duck	28	10
elephant	624	35
goat	151	12
guinea pig	68	3
hamster	16	2
horse	336	23

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b. Find the coordinates of **two** data points on your line from the table.

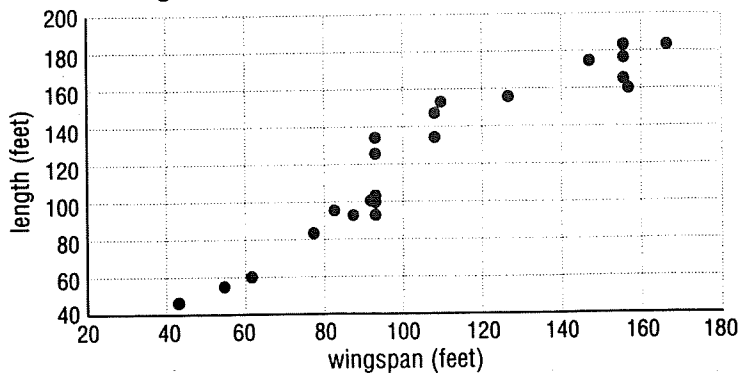
c. Estimate the slope of your line of best fit using your two data points.

d. Predict the life span of a lion (gestation period of 108 days) from your line of best fit.

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The scattergram below illustrates the wingspan and length of 2-engine and 3-engine jet planes.

Length and Wingspan of 2- and 3-engine Jets



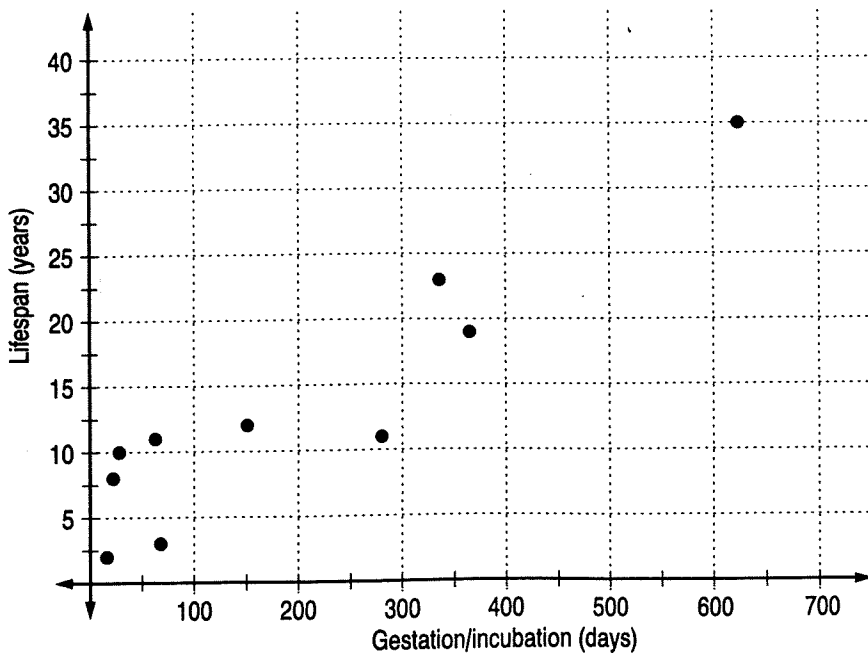
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(,) (,)

b. Find the slope of your line.

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3. Below is a scattergram of the average life spans and the average gestation or incubation period of the various animals listed in the table.



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Circle the data points in the table.

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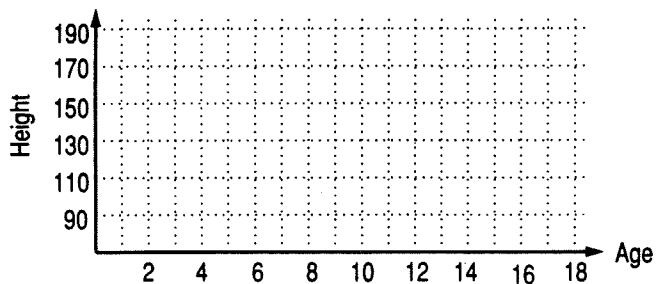
Year	Length of toss (m)
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Lines of Best Fit

4. Below is a table showing the median height in cm of boys in the U.S. by age.

Age	Height (cm)	Age	Height (cm)	Age	Height (cm)
2	87	8	127	14	163
3	95	9	132	15	169
4	103	10	138	16	174
5	110	11	143	17	176
6	116	12	150	18	177
7	122	13	160		

a. Graph this data and sketch a line to fit the data.



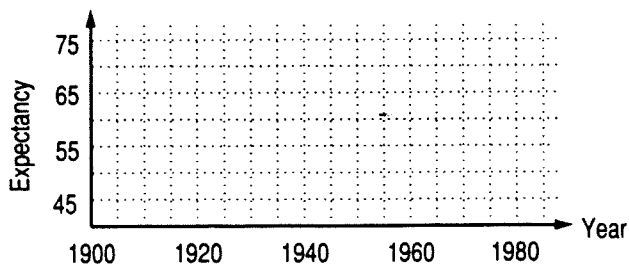
b. Estimate the slope of your line of best fit using two data points ON your line.

Circle the data points in the table.

5. The table below gives the life expectancy of the average person at birth in the U.S. for the years 1900–1980.

Year	Expectancy	Year	Expectancy
1900	47.3	1950	68.2
1910	50.0	1960	69.7
1920	54.1	1970	70.8
1930	59.7	1980	73.8
1940	62.9		

a. Graph this data and sketch a line to fit the data.



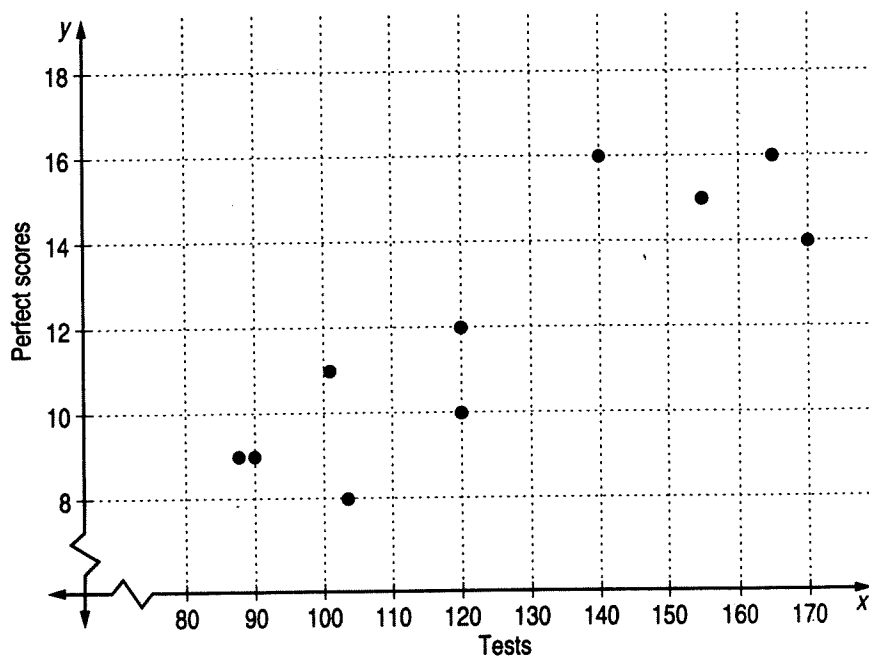
b. Estimate the slope of your line of best fit using two data points ON your line.

Circle the data points in the table.

c. What life expectancy would you predict in 1990?

6. Below is a scattergram of test scores for each mathematics class in Mann Junior High.

x Number of tests (total)	y Number of perfect test scores (total)
90	9
120	10
87	9
140	16
104	8
165	16
120	12
168	14
155	15
102	11



- Graph a line to fit the data with at least two points ON the line.
- Find the coordinates of two data points ON your line from the table.
 (\quad , \quad) (\quad , \quad) Circle the data points in the table.
- Estimate the slope of your line of best fit using your two data points.
- Predict the number of perfect test scores in a class that has taken 130 tests.

