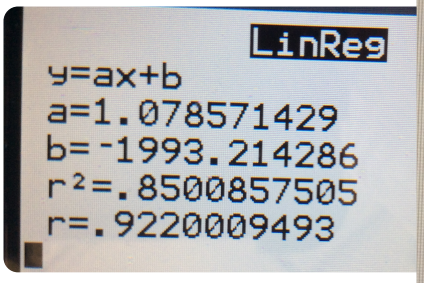
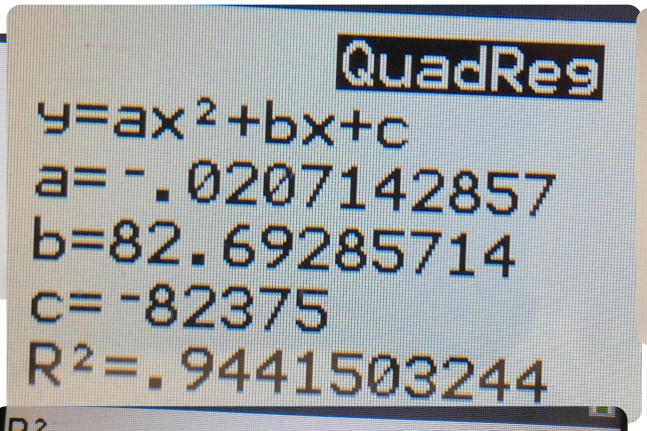
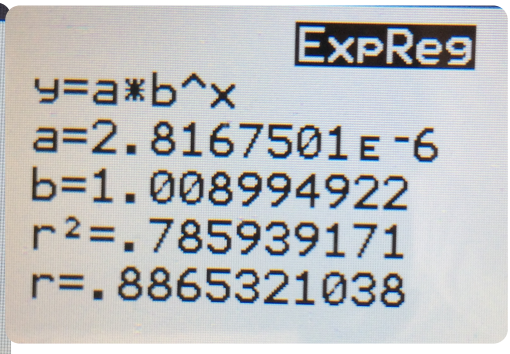
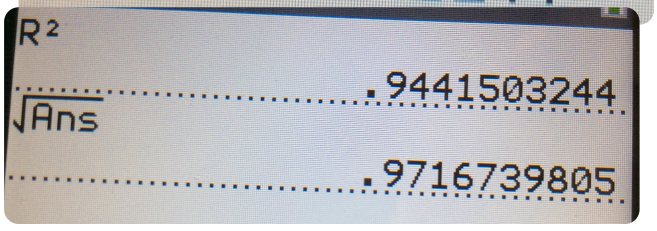
Graphing Calculator Lab

Modeling Data Using Polynomial Functions









LINEAR.

a = _____

b = _____

r = _____

QUADRATIC

a = _____

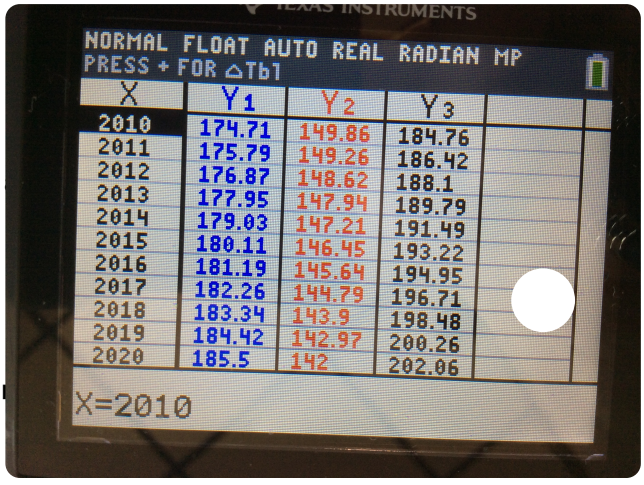
b = _____

c = _____

r = _____

Best Fit Model: _____

Type of Correlation: **Strong** **Moderate** **Weak** **None**



For Exercises 1–3, use the table that shows how many minutes out of each eight-hour workday are used to pay one day's worth of taxes.

1. Draw a scatter plot of the data. Then graph several curves of best fit that relate the number of minutes to the number of years since 1930.

3. Based on this equation, how many minutes should you expect to work each day in the year 2010 to pay one day's taxes?

Year	Minutes
1940	83
1950	117
1960	130
1970	141
1980	145
1990	145
2000	160

Source: Tax Foundation

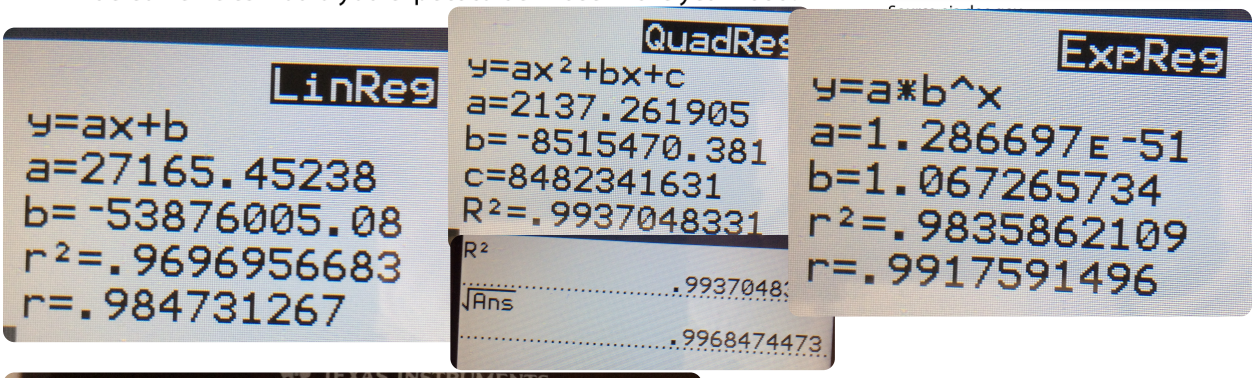
For Exercises 4–7, use the table that shows the estimated number of alternative-fueled vehicles in use in the United States per year.

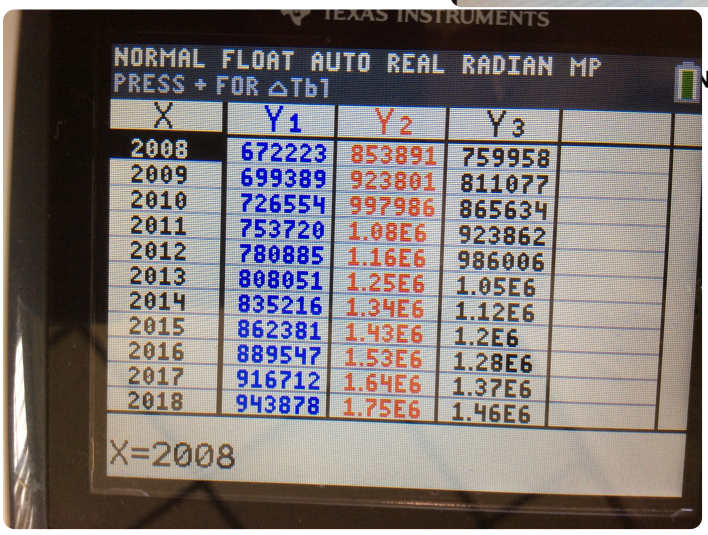
Year	Estimated Alternative-Fueled Vehicles in Use in the United States
1995	333,049
1996	352,421
1997	367,526
1998	383,847
1999	411,525
2000	455,906
2001	490,019
2002	518,919

4. Draw a scatter plot of the data. Then graph several curves of best fit that relate the number of vehicles to the year.

5. Write the equation for the curve that best fits the data. Round to the nearest tenth.

6. Based on this equation before rounding, how many Alternative-Fueled Vehicles would you expect to be in use in the year 2008?





None

For Exercises 8–11, use the table that shows the distance from the Sun to the Earth for each month of the year.

Month	Distance
January	0.9840
February	0.9888
March	0.9962
April	1.0050
May	1.0122
June	1.0163
July	1.0161
August	1.0116
September	1.0039
October	0.9954
November	0.9878
December	0.9837

Source:astronomycafe.net

8. Draw a scatter plot of the data. Then graph several curves of best fit that relate the distance to the month.
9. Write the equation for the curve that best fits the data.
10. Based on this equation, what is the distance from the Sun to the Earth halfway through September?
11. Would you use this model to find the subsequent years? Explain your reas