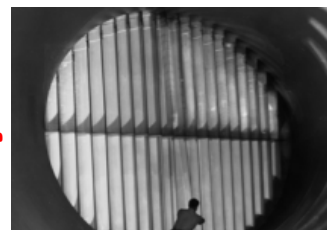


Something to think about

Two type of race cars designed and built by NASCAR teams are short track and super-speedway (long track) cars. The super-speedway race cars are subjected to extensive testing in wind tunnels. Short track race cars and super-speedway cars are designed either to allow for as much downforce as possible or to reduce the amount of drag on the race car. Which design do you think is used for each type of race car? Why?



How do you find the points of intersection of two graphs?



Consider the two equations:

What are the points of intersection?

$$x = 3 - y^2$$

$$y = x - 1$$



With your neighbor talk about why solving this problem analytically is better than by graphing?

Modeling data

Year	1950	1960	1970	1980	1990	2000
Acreage	213	297	374	426	460	434

The table above shows the average numbers of acres per farm in the United States for selected years

Using your grapher, plot the data using $t=0$ corresponding to 1950 and graph the data.

Use the regression function on your calculator to find a model for your data. What type of model should you use?

Use your model to predict the average number of acres per farm in 2010.

Writing equations.

A graph has intercepts at $x = -\frac{5}{2}; x = 2; x = \frac{3}{2}$

$$\left(x + \frac{5}{2}\right)(x - 2)\left(x - \frac{3}{2}\right)$$

$$\left(2x + 5\right)(x - 2)\left(2x - 3\right)$$

How do you write an equation to model this graph? (without your calculator)

$$y = 4x^3 - 4x^2 - 23x + 30$$

P.1 Graphs and Models

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