

Scatter Plots

Bell Work:

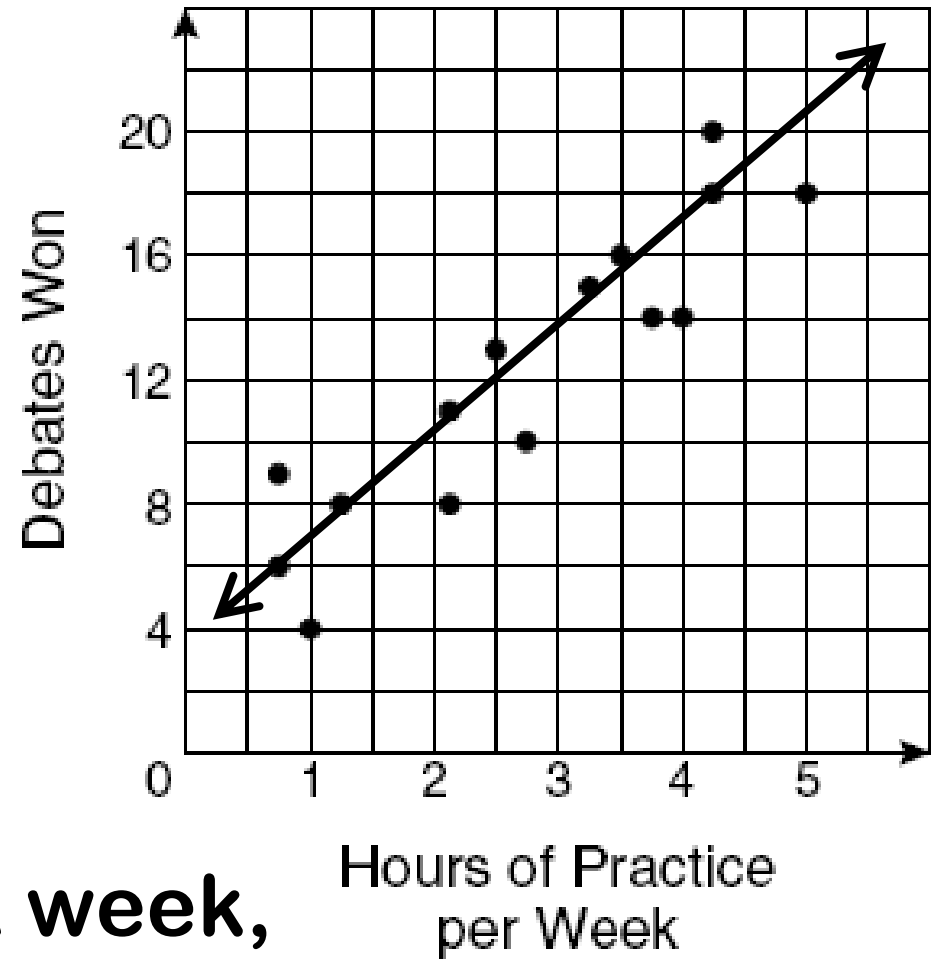
1. What type is this linear function? $3x - 5y = -20$
2. What is the slope of the line with an equation of $2x + 7y = 18$?
3. What is the equation in slope-intercept form of a line that has a slope of $-\frac{2}{3}$ and goes through $(-9, 5)$?
4. What is the range for the linear parent function?

Scatter Plots

You will find the line of best fit of scatter plots, find the equation of the line of best fit, and use the equation to solve word problems.

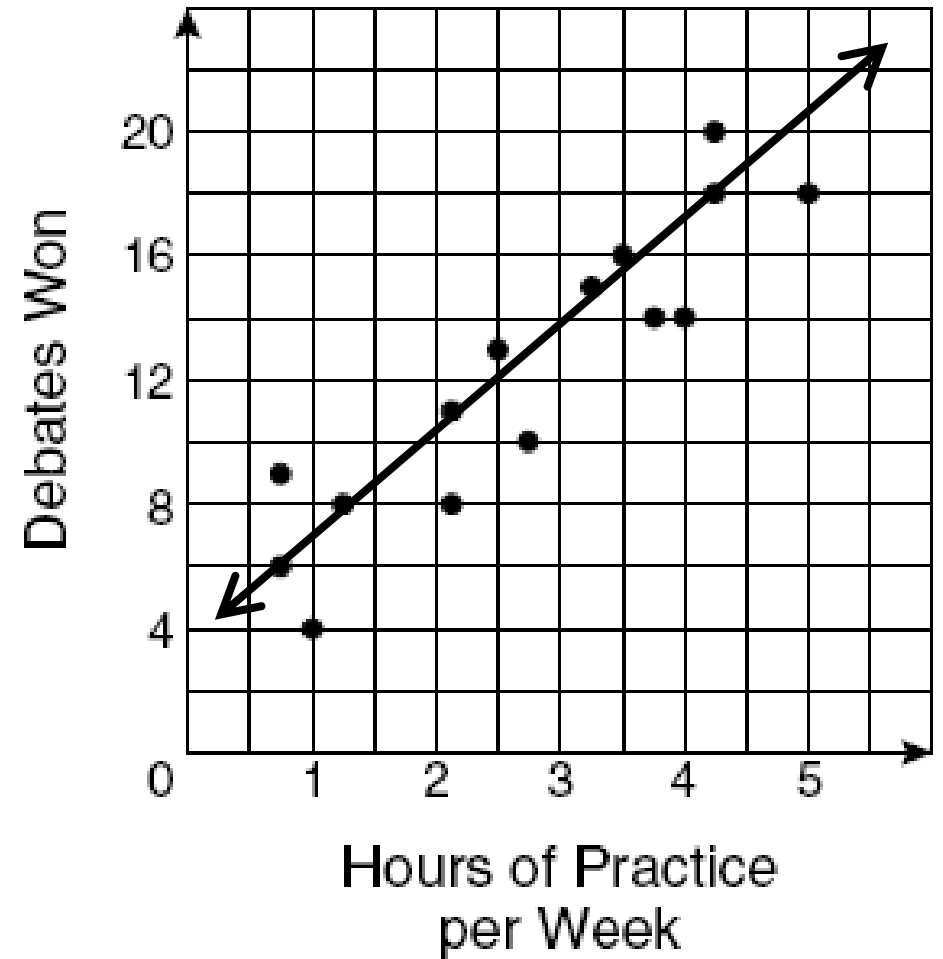
$$y = \frac{24}{7}x + \frac{24}{7}$$

If a debater practiced for 7 hours a week, he or she should win about 27 debates.



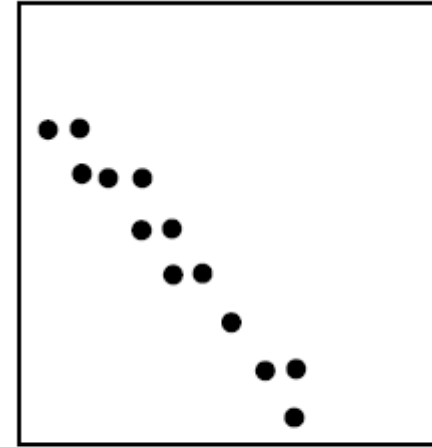
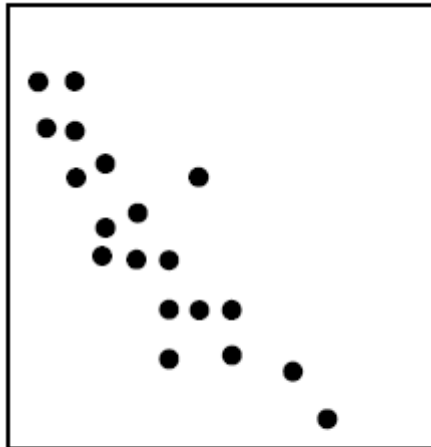
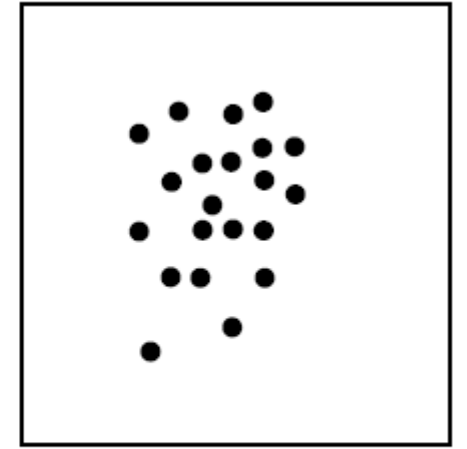
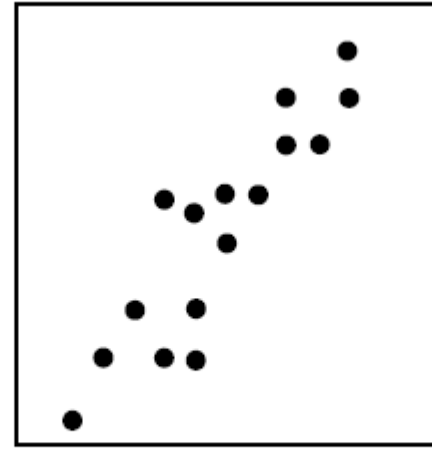
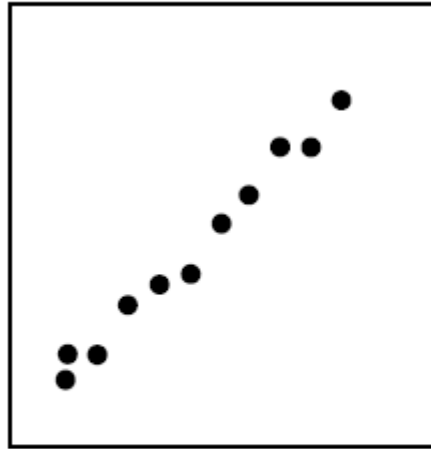
Scatter Plots

Scatter plots help to find trends in a population and helps to find correlations.



Scatter Plots

Scatter Plots
have different
correlations.

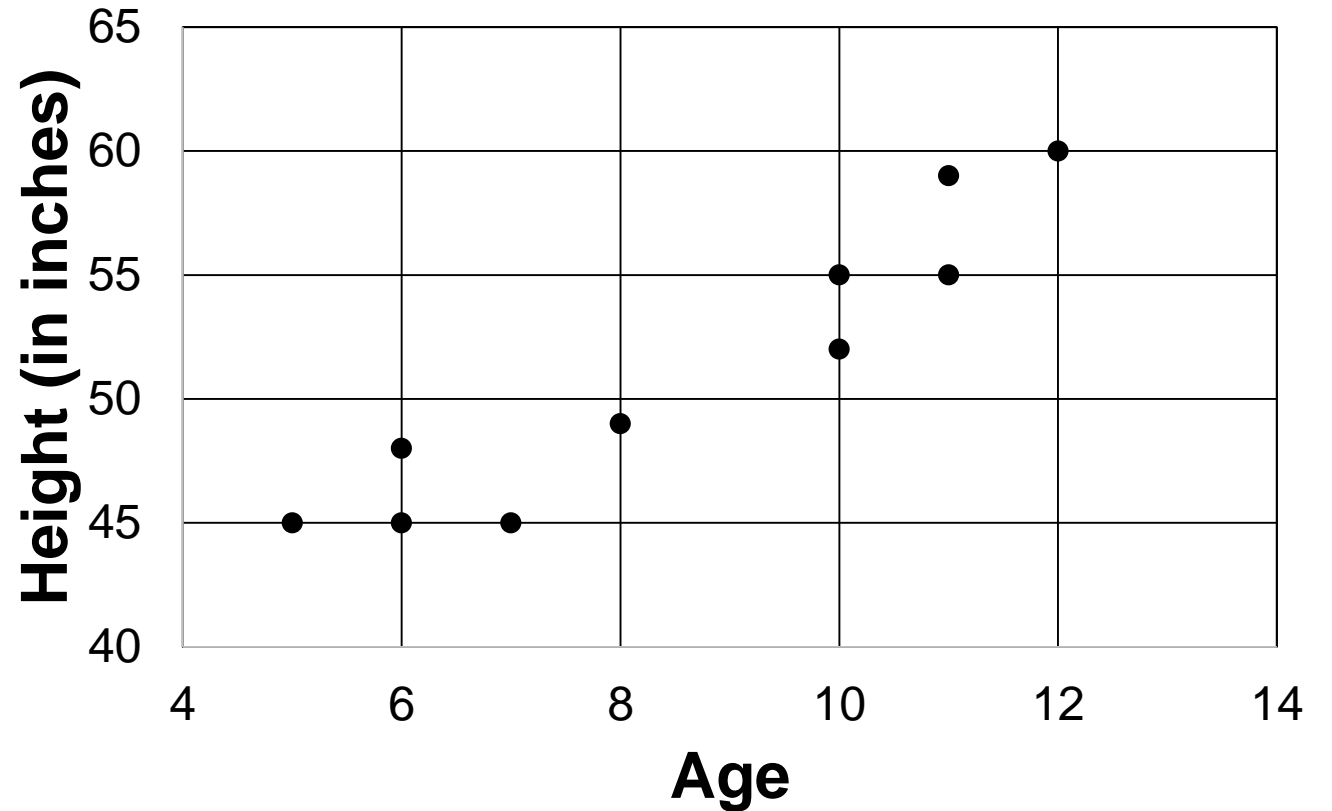


Scatter Plots

The Line of Best Fit:

- goes through 2 points,
- is close to all the other points,
- half of the rest of the points are above, and
- half of the rest are below.

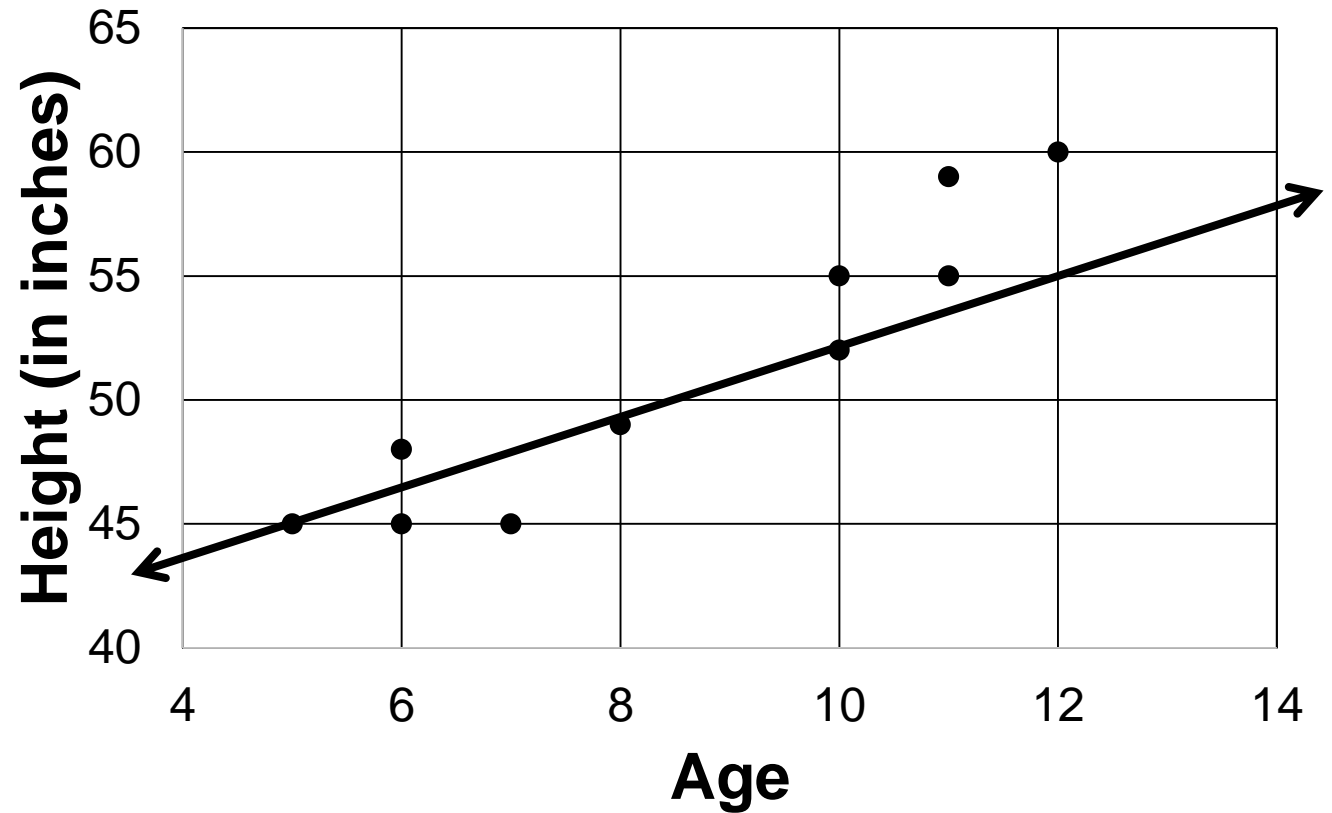
Height of Several Boys



Scatter Plots

This is not a good line of best fit since 5 are above and 2 are below.

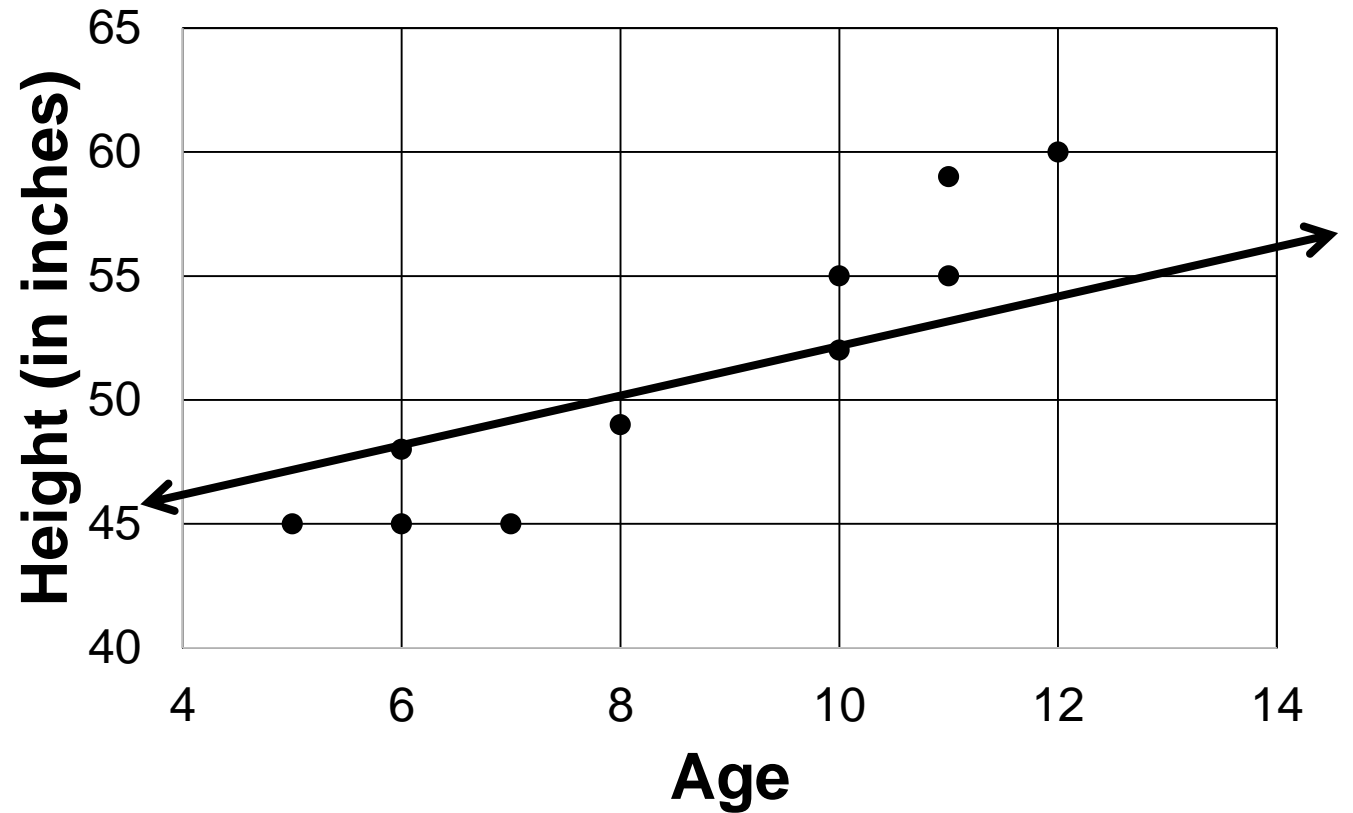
Height of Several Boys



Scatter Plots

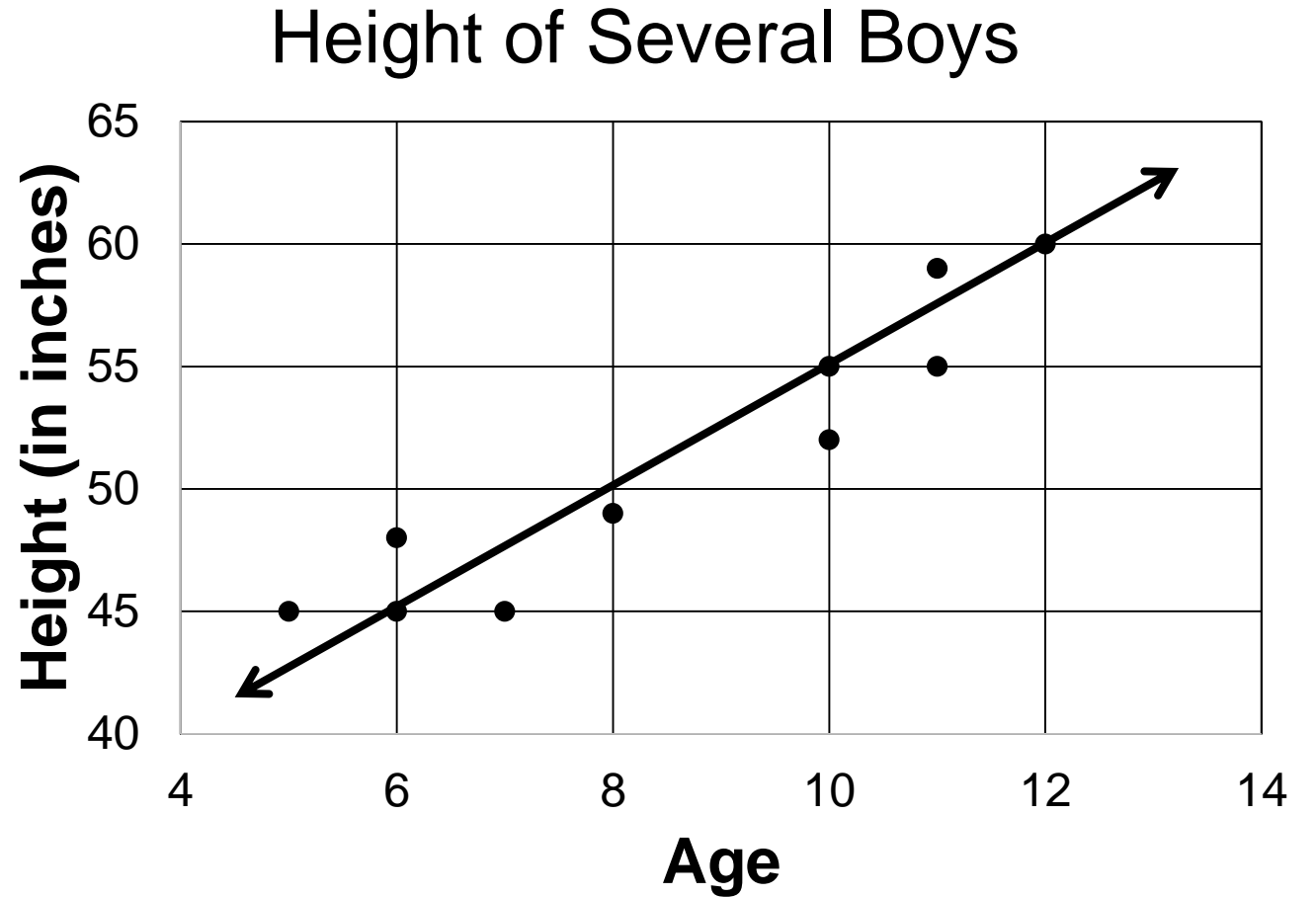
This is not a good line of best fit since the line not close to several points.

Height of Several Boys



Scatter Plots

This is a good line of best fit.



Scatter Plots

What is the linear function of the line?

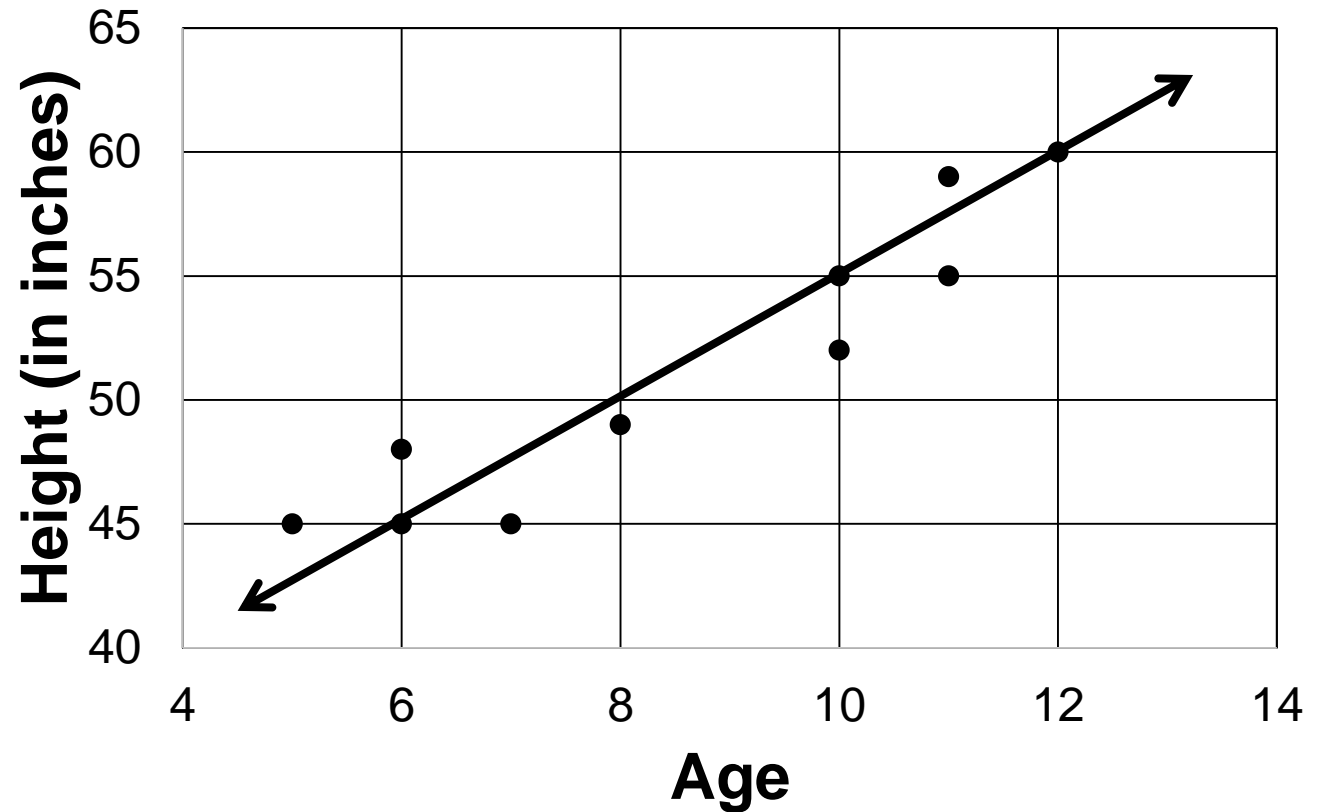
$$\frac{55 - 45}{10 - 6} = \frac{10}{4} = 2.5$$

$$y - 45 = 2.5(x - 6)$$

$$y - 45 = 2.5x - 15$$

$$y = 2.5x + 30$$

Height of Several Boys



Scatter Plots

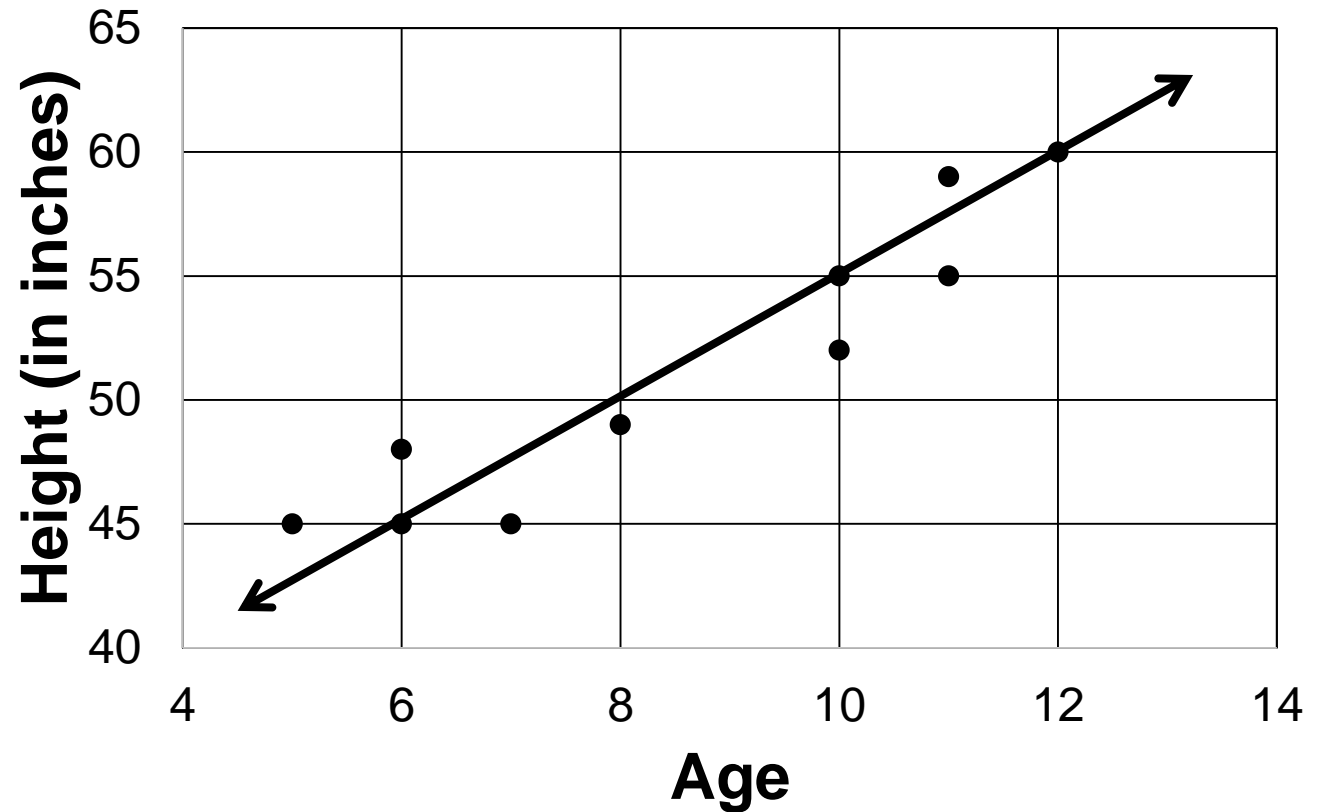
What is a possible height of a 15 year old?

$$y = 2.5x + 30$$

$$y = 2.5(15) + 30 = 67.5$$

He would be about 67.5 inches tall.

Height of Several Boys



Scatter Plots

How old would a 72 inch boy be?

$$y = 2.5x + 30$$

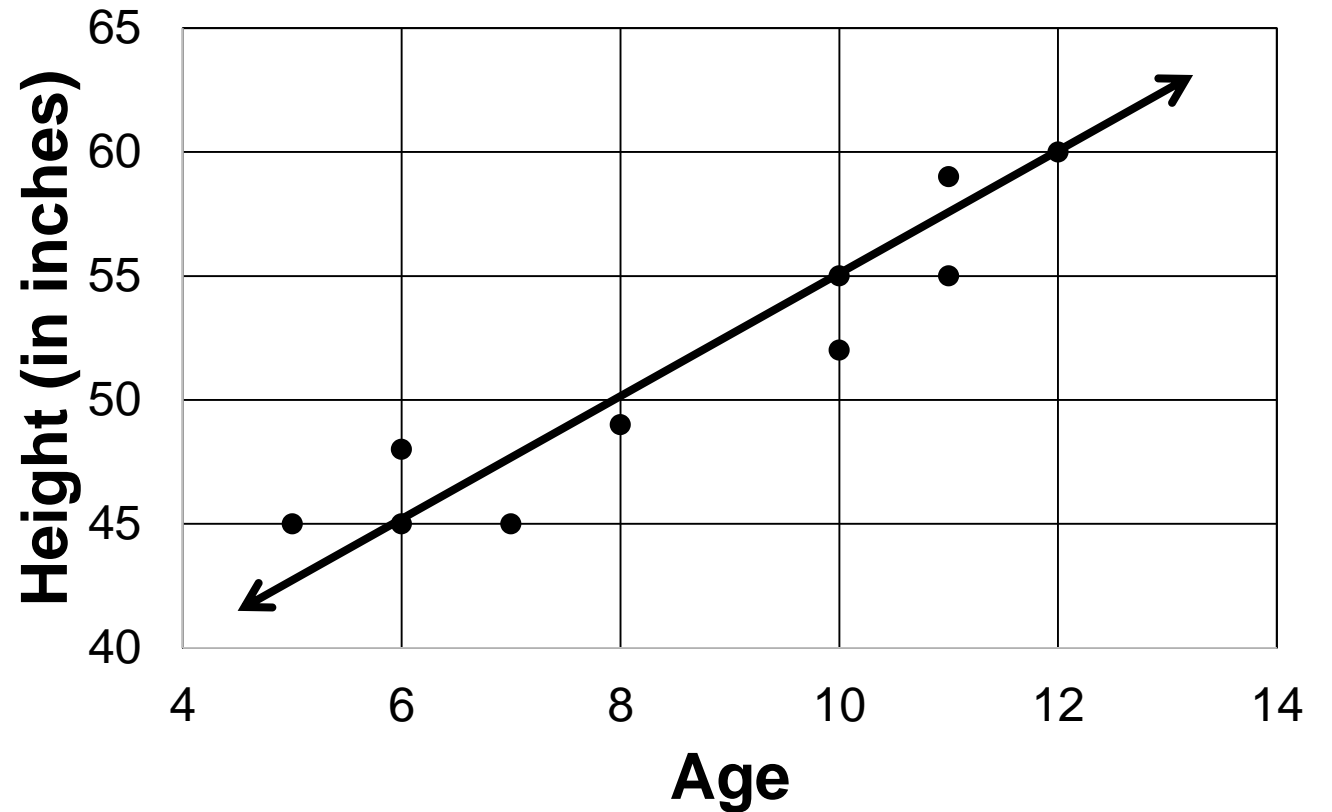
$$72 = 2.5x + 30$$

$$42 = 2.5x$$

$$16.8 = x$$

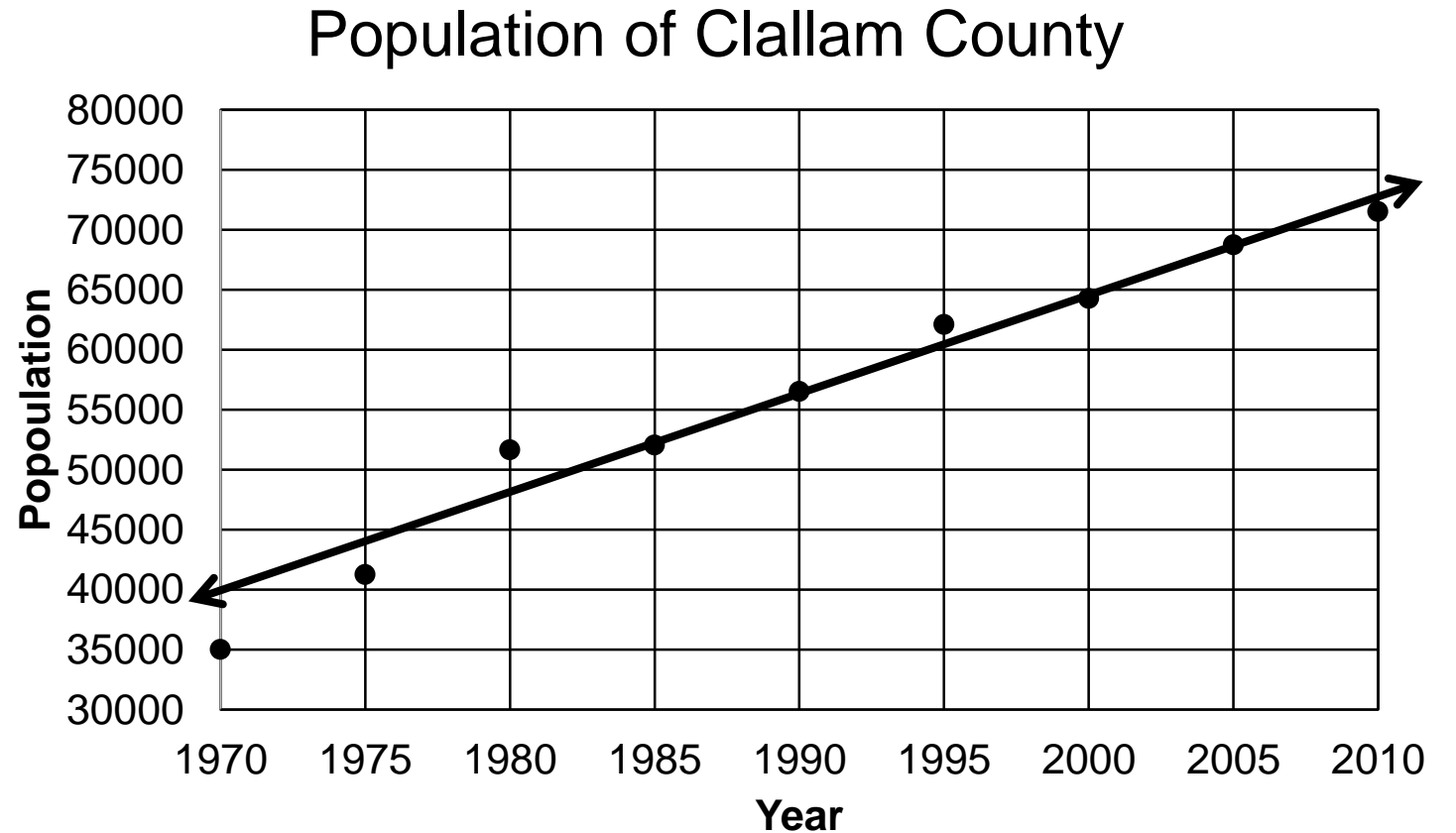
He would be almost 17 years old.

Height of Several Boys



Scatter Plots

What would be a good line of best fit?



Scatter Plots

What is the linear function of the line?

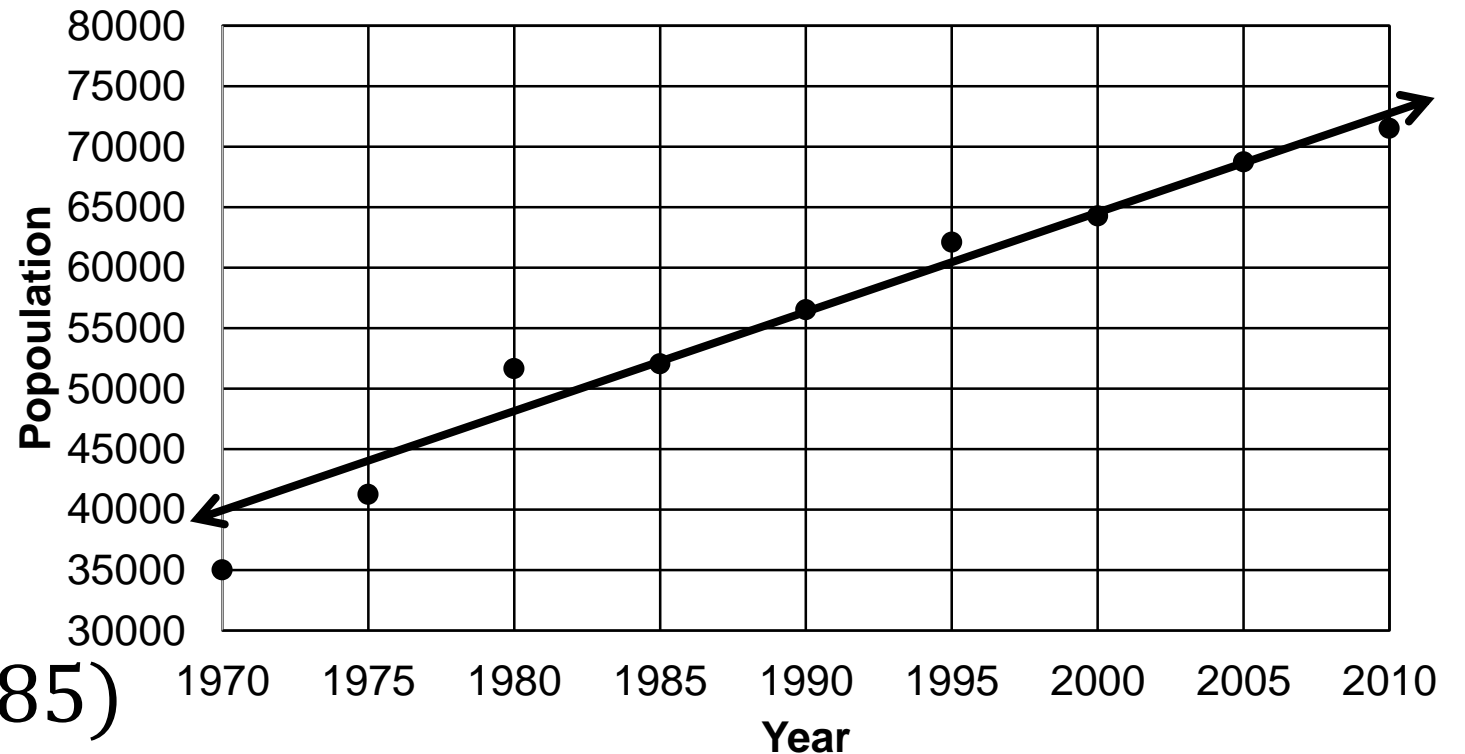
$$\frac{69,000 - 52,000}{2005 - 1985} = \frac{17,000}{20} = 850$$

$$y - 52,000 = 850(x - 1985)$$

$$y - 52,000 = 850x - 1687250$$

$$y = 850x - 1635250$$

Population of Clallam County



Scatter Plots

What might be the population be today?

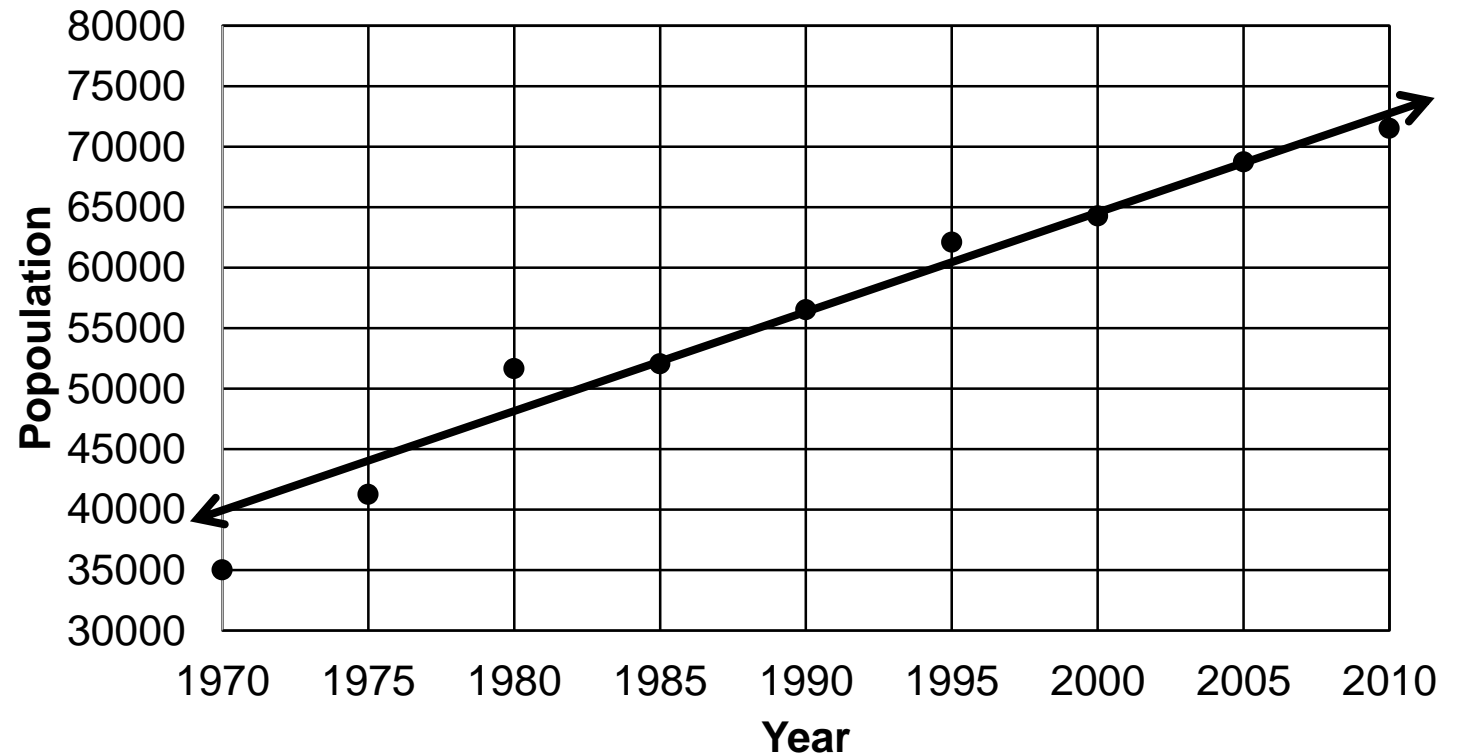
$$y = 850x - 1635250$$

$$y = 850(2015) - 1635250$$

$$y = 77500$$

The population might be 77,500.

Population of Clallam County



Scatter Plots

When will the population be 80,000?

$$y = 850x - 1635250$$

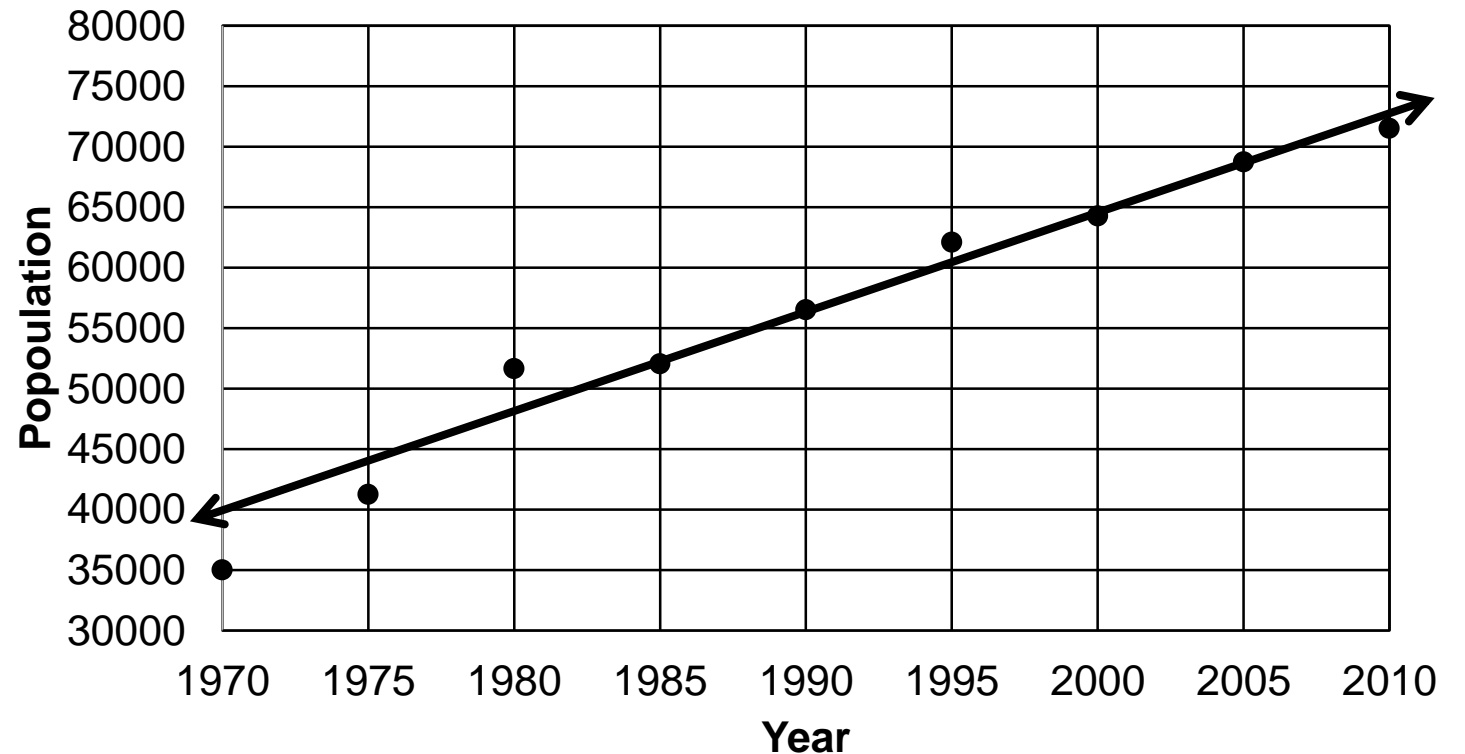
$$80,000 = 850x - 1635250$$

$$1715250 = 850x$$

$$2017.9 = x$$

The population might be 80,000 at the end of 201.

Population of Clallam County



Scatter Plots

Assignment:

FLUENCY PRACTICE: Scatter Plots