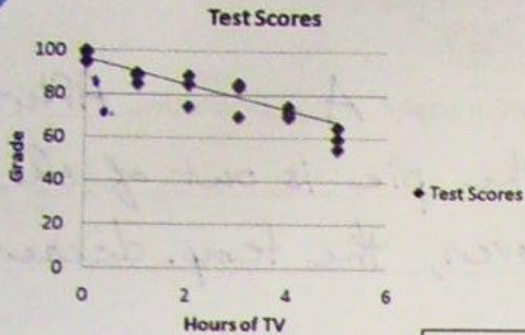


Introducing Scatter Plots [Topic 3B]

Name: 1st p

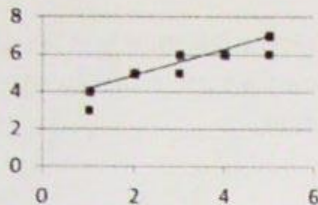
A **scatter plot** is a type of graph that relates two groups of data.



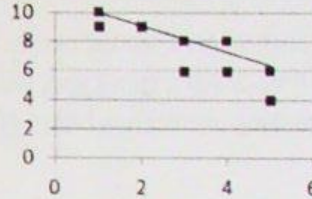
What does this trend tell us about grades and how much TV you watch?

The more TV watched, the lower the grade

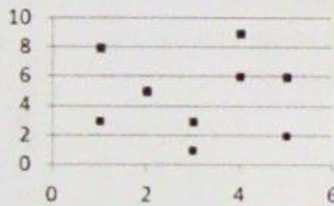
There are 3 kinds of scatter plot correlations:



Positive Correlation – both sets of data increase together.



Negative Correlation – one set of data increases, while the other decreases.



No Correlation – when the data doesn't seem to be related.

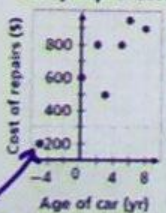
What kind of correlation would you expect between the following data sets?

1. A person's age and the number of pets he/she has No correlation
2. The number of times you brush your teeth and the number of cavities you have Negative
3. The number of days it rains in a year and the number of umbrellas sold Positive

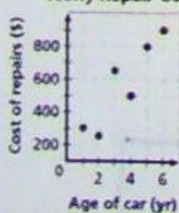
4. Choose the scatter plot that best represents the relationship between the age of a car and the amount of money spent each year on repairs. Explain.



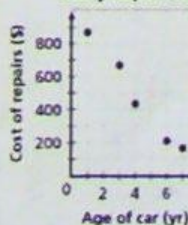
Graph A
Yearly Repair Costs



Graph B
Yearly Repair Costs



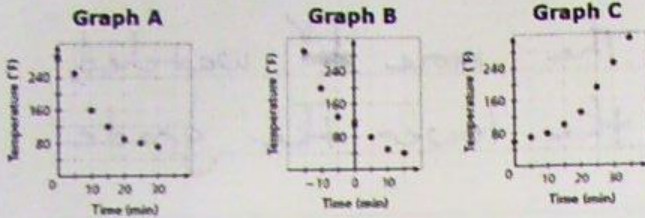
Graph C
Yearly Repair Costs



Which graph? B Explanation: As the

age increases, the cost of repairs increases.

5. Choose the scatter plot that best represents the relationship between the number of minutes since a pie has been taken out of the oven and the temperature of the pie. Explain.

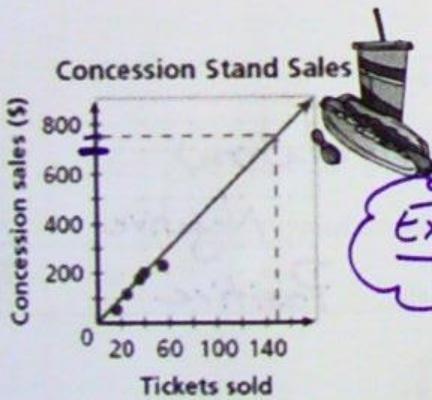
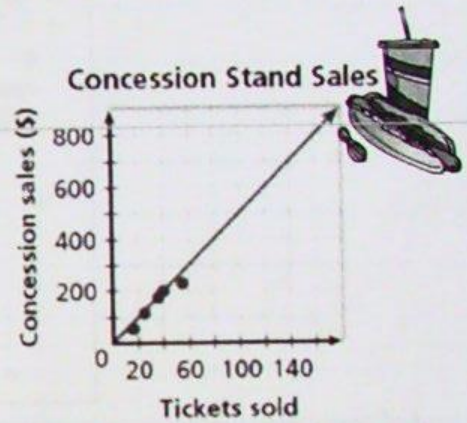


Which graph? A Explanation: After the pie is out of the oven, the temp. decreases

Introducing Trend Lines or Lines of Best Fit

You can graph a function on a scatter plot to help show a relationship in the data. Sometimes the function is a straight line. This line, called a **trend line**, helps show the correlation between data sets more clearly. It can also be helpful when making predictions based on the data.

6. The scatter plot shows a relationship between the total amount of money collected at the concession stand and the total number of tickets sold at a movie theater. Based on this relationship, predict how much money will be collected at the concession stand when 150 tickets have been sold.



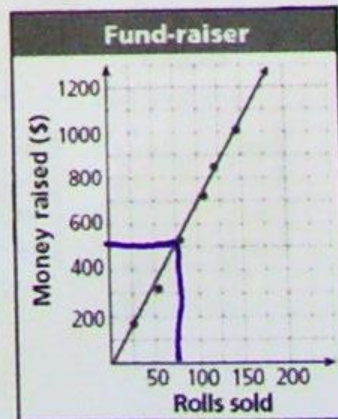
\$ 750

Extrapolation

7. Based on the trend line, predict how many wrapping paper rolls need to be sold to raise \$500.

75 rolls

Intrapolation



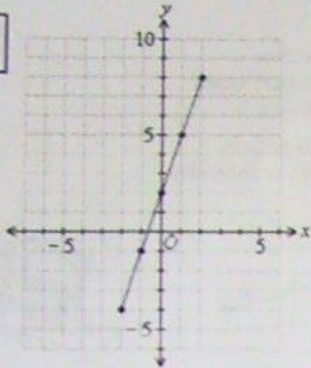
$y = mx + b$

$m = \text{slope}$,
draw your step
 $\frac{\text{rise}}{\text{run}}$

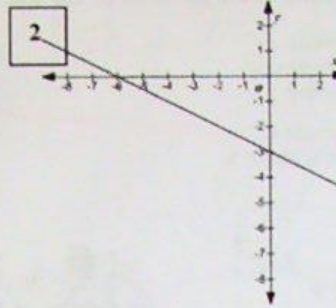
$b = \text{y-intercept}$
where the line
intersects the y-axis

View Writing an Equation from a Graph

Find the slope of the line, the y-intercept of the line, and write the equation for the line.

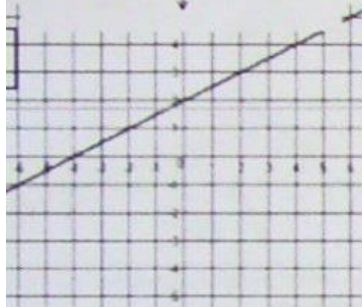


Slope: _____
y-intercept: _____
Equation: _____

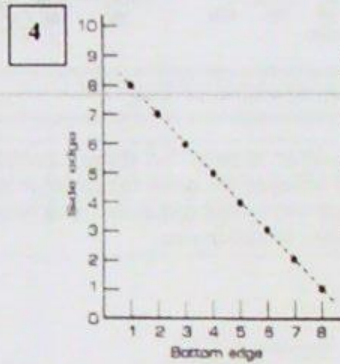


Slope: _____
y-intercept: _____
Equation: _____

Length vs. Width



Slope: _____
y-intercept: _____
Equation: _____

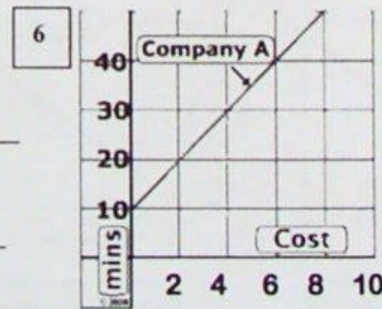


Slope: _____
y-intercept: _____
Equation: _____

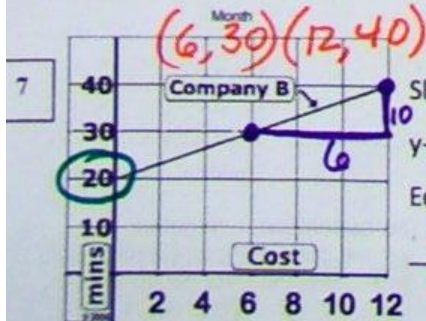
John's Savings Account Balance for the Year



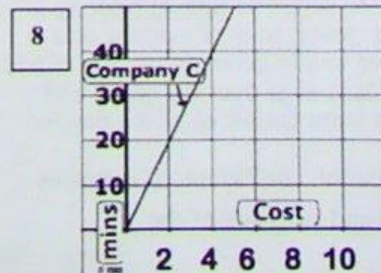
Slope: _____
y-intercept: _____
Equation: _____



Slope: _____
y-intercept: _____
Equation: _____



Slope: $\frac{10}{6} = \frac{5}{3}$
y-intercept: 20
Equation: $y = \frac{5}{3}x + 20$



Slope: _____
y-intercept: _____
Equation: _____