

## What's Going On?

**Checking In**

The Test

**Minds on**

Scatter!

**Action!**

Gettin' Joggy With It

**Consolidation**

Practice

**Learning Goal - I will be able to create and interpret scatter plots.**

Minds on

# Scatter!

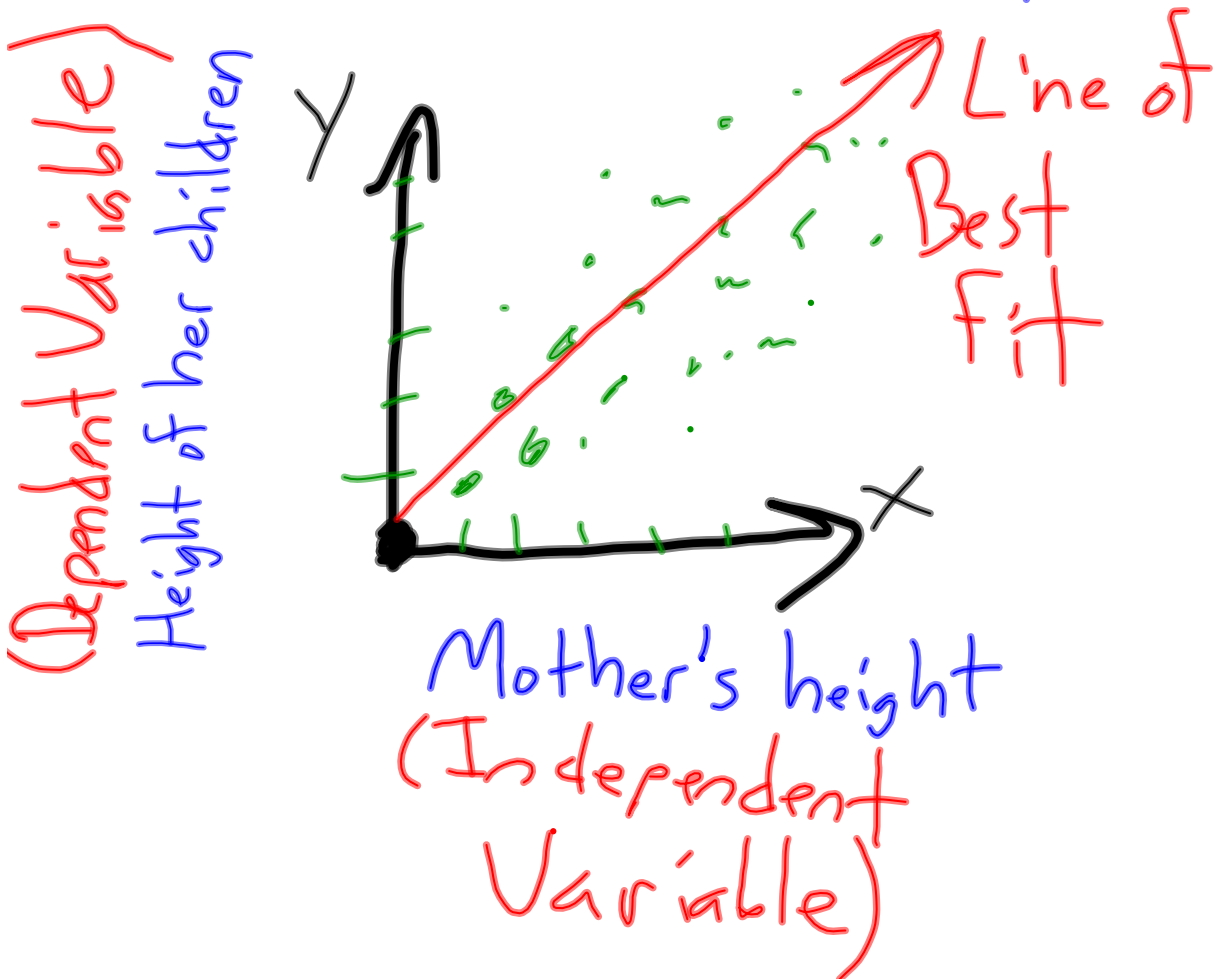
Mother's height and the height of her children.

Independent Variable

Mother's height

Dependent Variable

Height of her children



Minds on

## Scatter!

The cost of gasoline and the number of people using public transit.

Independent Variable

cost of gasoline

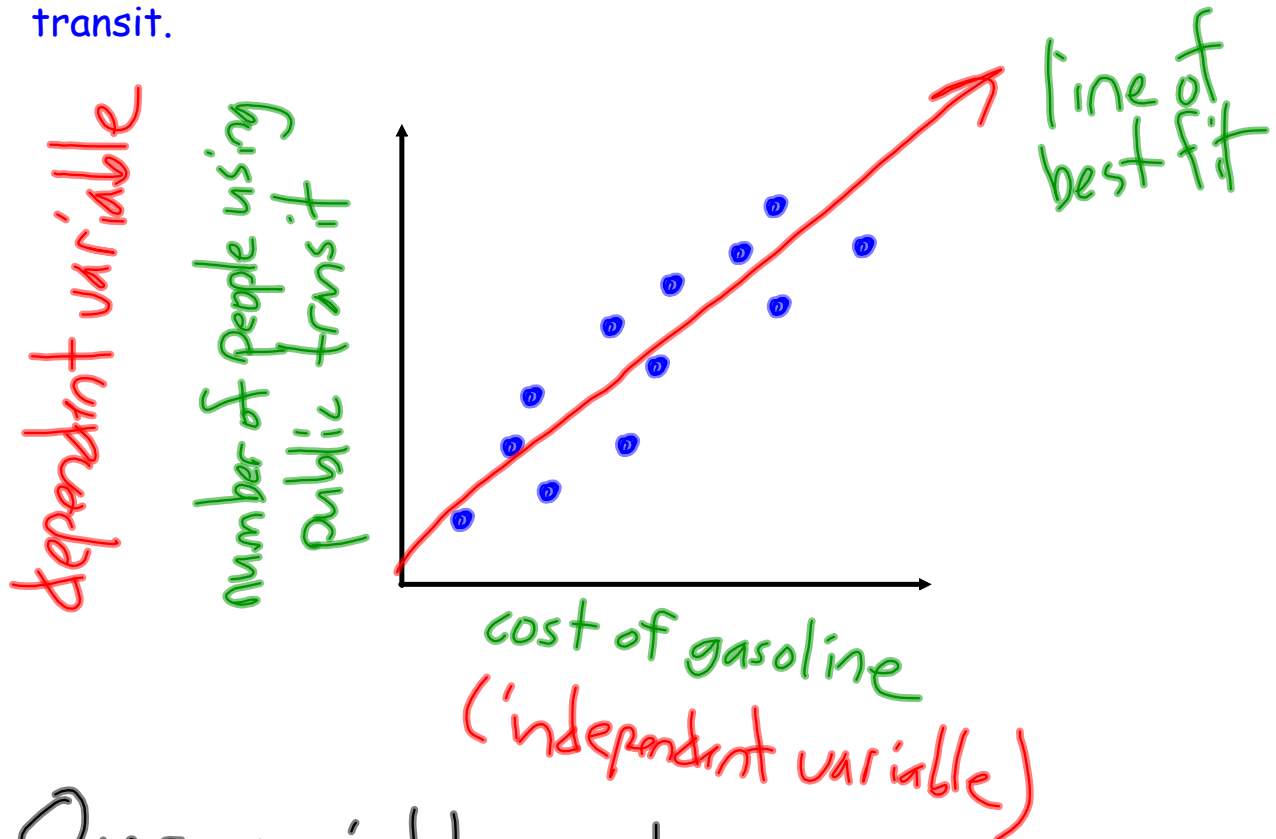
Dependent Variable

number of people using public transit

## Minds on

## Scatter!

The cost of gasoline and the number of people using public transit.



Our variables show a POSITIVE CORRELATION correlate

## Minds on

## Scatter!

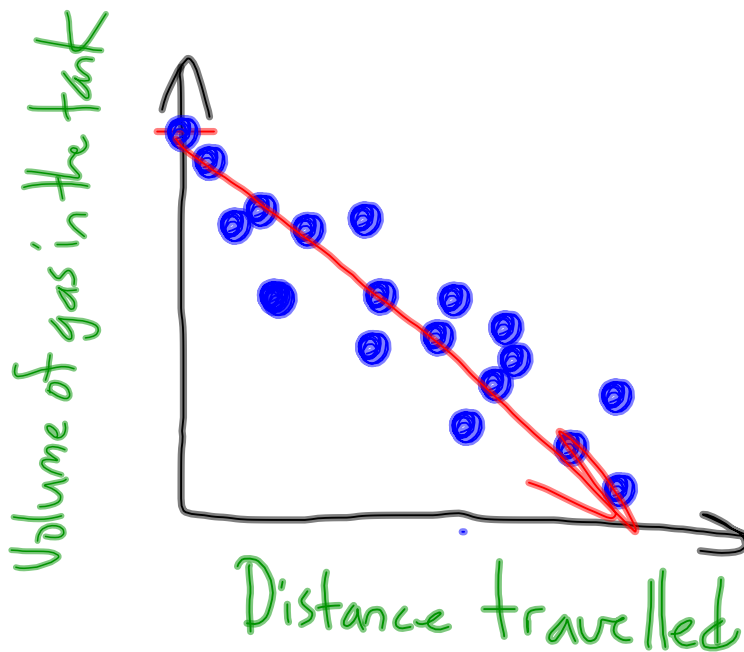
The distance travelled by a car and the volume of gasoline in the tank.

## Independent Variable

Distance travelled

## Dependent Variable

Volume of gas in the tank



This shows a negative correlation.

Minds on

# Scatter!

The number of hours spent studying and a students' average grade.

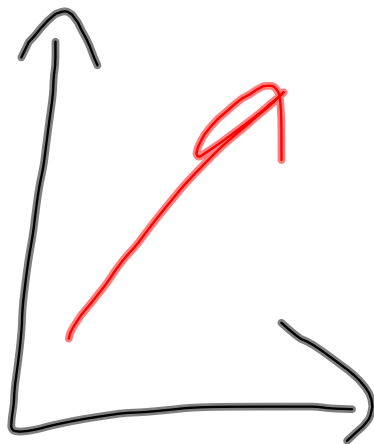
Independent Variable

Number of hours spent studying

Dependent Variable

Students' average grade

Positively Correlated



## **Action!** Gettin' Joggy With It

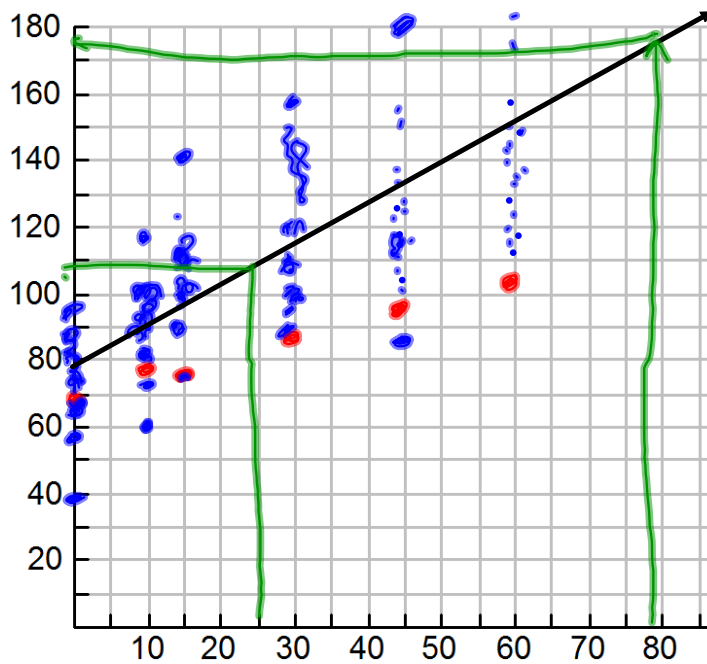
1. Find your pulse.
2. When I say, start counting your heart beats.
3. We will count beats for 20 seconds, then multiply by 3 to find our heart rates in Beats Per Minute (BPM).
4. Then we will jog on the spot for 5 different intervals and find our heart rate after each interval

10 seconds  
15 seconds  
30 seconds  
45 seconds  
60 seconds

**Action!**

### Gettin' Joggy With It

Heart Rate (BPM)



Line of Best Fit

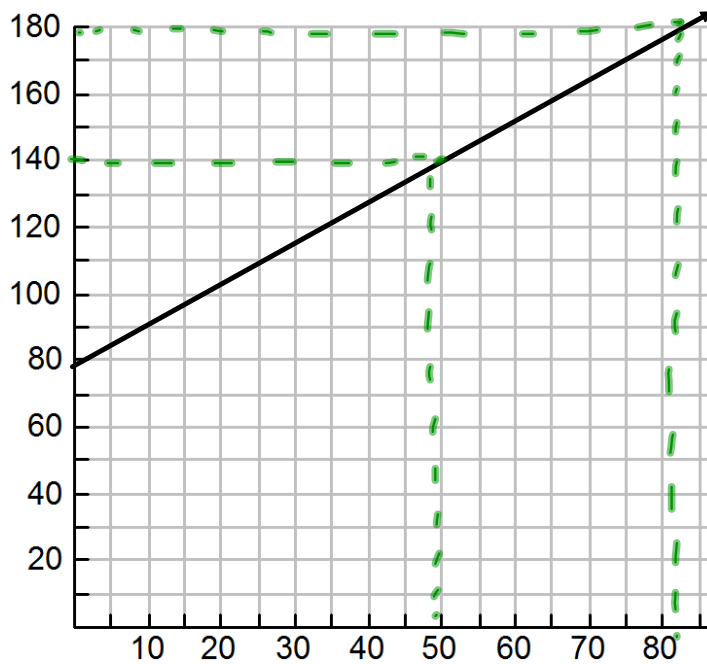
Time Spent Jogging (s)



**Action!**

### Gettin' Joggy With It

Heart Rate (BPM)



Line of Best Fit

Time Spent Jogging (s)

Describe the trend in heart rate.

As time spent jogging increases,  
ind. var.  
heart rate increases.  
dep. var.

∴ Positive Correlation

Predict what a person's heart rate would be after running for 80 seconds.

175 bpm

→ estimating beyond  
the data

This is an example of extrapolation.

~~interpolation~~

Predict what a person's heart rate would be after running for 25 seconds.

108 bpm

— estimation  
within  
our  
data

This is an example of interpolation.

**extrapolation**

## Consolidation

### Key Points to Remember:

- An independent variable answers the question, "what can I change?"
- A dependent variable answers the question, "What do I observe?"
- Graphs (**scatter plots**) help us to recognize trends in a set of data.
- In a **positive correlation**, as one variable increases, the other variable increases.
- In a **negative correlation**, as one variable increases, the other variable decreases.
- When you **interpolate**, you estimate values **within** the graph (between two measurements in a set of data).
- When you **extrapolate**, you estimate values **beyond** the graph (outside the range of a set of data).

## Consolidation

Practice:

- p. 64 # 1, 2, 3, 5
- P. 73 # 2, 4