What do you think the graph of skid mark length as a function of speed would look like?

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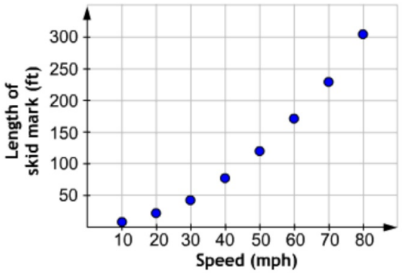
SAS1 - Topic 2

Do questions 1 and 2

2. What type of function might model this data?



Some kind of curve such as an exponential or quadratic function

What would the y-intercept be?

given the situation, the y-intercept should be zero since there will be no skid mark if the speed were zero. This means that an exponential equation probably doesn't model the data since exponetial equations such as $y = a(b)^x$ don't pass through the origin.

2. What type of function might model this data?

Speed (mph)	Length of skid mark (ft)	1st diff	2nd diff
10	4.76		
		14.29	
20	19.05		9.52
		23.81	
30	42.86		9.52
		33.33	
40	76.19		9.53
		42.86	
50	119.05		9.52
		52.38	
60	171.43		9.52
		61.90	
70	233.33		9.53
		71.43	
80	304.76		

The first differences aren't constant so it's not a linear function. However, the second differences seem to be constant so this data can probably be modeled with a quadratic function.

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What are the two variables?

speed and length of skid mark

Which variable do the police investigators think of as the independent variable and which as the dependent variable?

IND - Skid Mark DEP - Speed

They just switched the x and y values.

How would the police investigators graph the data?

Skid mark on x-axis and Speed on y-axis

The would just switch the axes.

SAS1 - Question 3

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How are the data tables similar? Different?

The data is the same, they just switched the columns.

How are the graphs similar? Different?

They are both curves but the police investigator graph appears to be the safety investigator graph turned sideways.

How are the domain and range of the Safety Investigators and Police Investigators related?

The domain from the safety investigators data became the range for the police investigators. And the range from the safety investigators data became the domain for the police investigators.

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What is a relation? a set of ordered pairs
(a bunch of points!)

What is the inverse of a relation?

set of ordered pairs obtained by switching the coordinates in each ordered pair.

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SAS1 - question 4 & 5

Agile Mind - Topic 2 - Exploring pg 1

SAS2 - question 1

SAS2 - question 2

How do you know that this plan can be modeled with a linear function?

It has a constant rate of change - SLOPE

Is every linear relation a function? Why?

No, the linear relation that creates a vertical line is NOT a function.

Relations and Functions

Why can you consider the relationship between the number of hours a car going at a constant speed and the distance the car has traveled a relation?

Because there is a predictable and consistent relationship between the the two quantities.

Is this relation a function?

Yes, for a given time there is only one distance that the car will travel.

Is the relationship between a word and its definition a function?

Not if the input is the word and the output is the definition. If you look up many words there are sometimes more than one defition given.

Hwk #8 - Finish questions 3-7 of SAS2 - Topic 2

Solve this equation for K

$W = AK - G$

$+G \quad +G$

$\frac{W+G}{A} = \frac{AK}{A}$

$K = \frac{W+G}{A}$

Solve this equation for K

$R \cdot \frac{C - KM}{R} = P \cdot R \longrightarrow C - KM = PR$

$-C \quad -C$

$\longrightarrow \frac{-KM}{-M} = \frac{PR-C}{-M}$

$K = \frac{PR-C}{-M}$