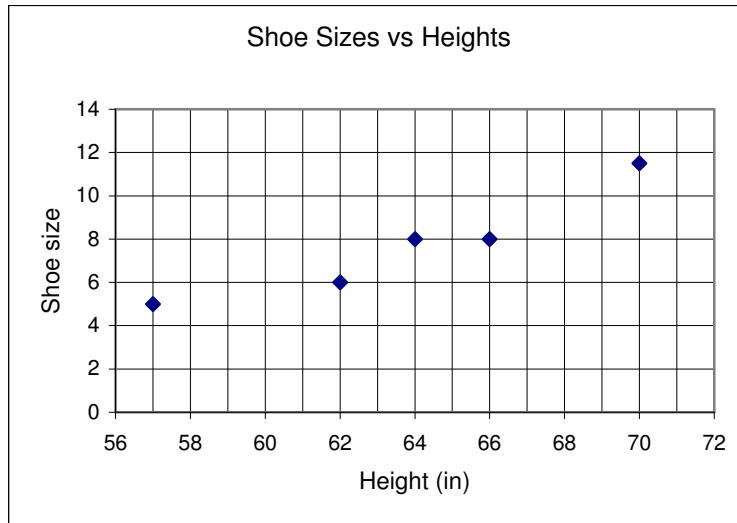


MATH 230 Session #37 - Practice Exercises

1. The following table records heights (inches) and corresponding shoe sizes of five fourth-grade boys. The pairs of numbers in the table are graphed as well. Draw a “line of good fit” to pass near the points in the graph, and find the equation for your line (which is called a trend line). Use your equation to predict the boys’ shoe sizes when given their heights in inches, and comment on how well your line fits the data.

Height (inches)	57	62	64	66	70
Shoe size	5	6	8	8	11.5
Model Predicts					
Error					



Let H = height (inches), and
 S = shoe size

My model’s slope:

My models’s intercept:

My model:

Sum of my errors:

My average error:

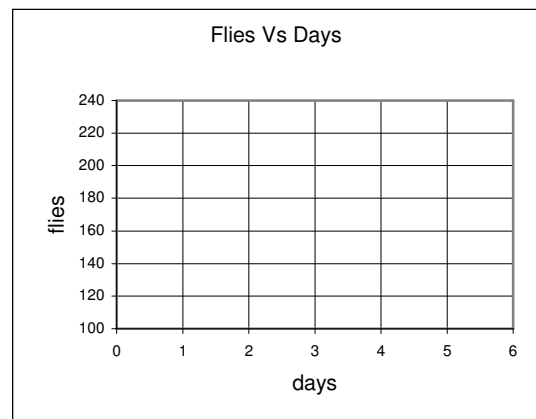
2. Suppose P_n = the number of flies in a big jar after n days and the growth in the size of the fly population is models by the difference equation below. Of course the number of flies in the jar will always be an integer; so there will be some round-off errors.

$$P_0 = 100$$

$$P_n = P_{n-1} + 0.15P_{n-1} \text{ for } n \geq 1.$$

Complete the table and graph.

n	P_n	ΔP_n	% Change
0			
1			
2			
3			
4			
5			
6			



Write a functional equation for P_n :

3. Consider the relationship between B_n and n shown in the table below. Complete the table and specify a rule for the relationship using a difference equation and a functional equation.

Δn	n	B_n	ΔB_n	$\Delta(\Delta B_n)$
	1	3		
	2	10		
	3	21		
	4	36		
	5	55		
	6	78		
	7			