Pizza Toppings

Based on the number of toppings, how many different pizzas are available? To find this answer, you will first explore a pattern and then make a conjecture.

<u>Exercise 1</u>
Suppose your local pizza delivery restaurant did not receive their shipment of toppings, but they still want to sell pizzas.

a. If no toppings are available, what kind of pizza will they sell?

Once the toppings arrive, many types of pizza are possible. To discover how many possibilities there are, let us examine each possibility one at a time.

b. If there is one topping available, say pepperoni, how many different pizzas are possible? List them.

c. If two toppings are available, say pepperoni and mushrooms, how many different pizzas are possible? List them.

d. Based on the pattern you see, complete the table below. If necessary, list the ingredients and possible pizzas to help you fill in the table.

Number of Toppings	Number of Possible Pizzas
0	
1	
2	
3	
4	
5	
6	
x	

e. What function represents the number of possible pizzas for x toppings?

Exercise 2

a. Suppose a plain pizza with no toppings is $10 and each additional topping costs $0.50.
Fill in the table below to determine pizza costs.

Number of Toppings	Cost
0	$10
1	$10.50
2	
3	
4	
5	
6	
x	

b. What function represents the cost of a pizza with x toppings?

Exercise 3

You have completed several activities that invo lve examining linear behavior. G raph the
functions from Exercises 1 and 2 to see if either falls into the linear category.

Obtain the PIZZA Aplet from your teacher or another student.

a. Press the PLOT key to see the graph. Describe the graphs you see.

b. Press the NUM key to verify your tables of values from Exercises 1 and 2.

c. Identify which is the lin ear function and which is not. Be sure to describe important
features of the graphs that helped you make your decision.