

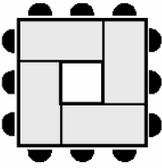
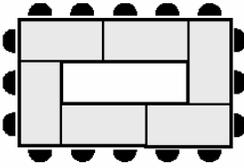
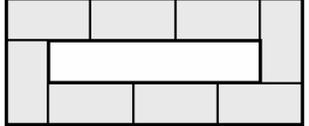
1. The cost to make widgets can be found by using the rule $y = 55x + 210$, where x is the number of hours of production and y represents the total cost.

a) How do you know the relationship between the number of hours of production and the total cost of production is a function?

b) Rewrite the rule $y = 55x + 210$ using function notation.

c) Find the value of $f(6)$ and explain what your answer means in the context of the problem situation.

2. The following visual description shows the different layouts that a conference center can arrange their conference tables.

Figure number	1	2	3
Visual description			
Number of seats	12	16	20

a) Suppose $f(n)$ represents the number of seats around the conference tables in figure number n . Can you represent the function notation? Fill in the table below.

$f(1)$	=	
	=	
	=	20
	=	

b) Fill in the table.

Figure number, n	Process	Number of seats, $f(n)$
1		12
2	$f(1) + 4$	16
3	$f(2) + 4$	20
4		
5		

c. You have found the recursive definition of the function expressing the relationship between the figure number and the number of seats. Using function notation, represent this function without using recursion.

3. The sequence 1, 4, 9, 16, 25, 36, ... is called the **square number sequence**. The sequence is a function with domain $\{0, 1, 2, 3, 4, 5, \dots\}$.

a. Find $f(7)$ and $f(12)$.

b. What is $f(n)$, where n represents any term in the sequence after $f(1)$?

4. Consider the sequence with domain $\{0, 1, 2, 3, 4, 5\}$, defined by $f(0) = 100$, $f(n) = 150 + f(n - 1)$.

a. Find the indicated term of the sequence.

$f(1) =$	
$f(2) =$	
$f(3) =$	
$f(4) =$	
$f(5) =$	

b. Explain why this sequence is a function. Use a diagram to support your explanation.