

Chapter 5 Review

1. Write a recursive equation that represents the monthly account balance given that you take out a loan for \$10,000 at a 6% APR and you want to pay it off over 5 years. Let x represent the value of your monthly payments.
2. Write a closed form equation for #1. Then use this to determine the value of your monthly payment, x .
3. Write a recursive definition that agrees with the values in the table below

n	$g(n)$
0	3
1	4
2	7
3	11
4	18
5	29
6	47

4. Find a recursively defined function that agrees with $f(n) = 3n^2 + n + 2$ for all nonnegative integers n . (3 points)

5. Briefly describe two different options that you can use to determine a polynomial function when you are given an input-output table. Then use one of those methods to determine a closed form equation for the table below. Write the closed form equation in descending order. (3 points)

Input x	Output g(x)
0	5
1	15
2	31
3	41
4	33
5	-5

Find a closed form equation for the recursive equation $g(n) = \begin{cases} 4 & \text{if } n = 0 \\ 11 & \text{if } n = 1 \\ 7 \cdot g(n-1) - 10 \cdot g(n-2) & \text{if } n > 1 \end{cases}$.

A change table has been provided

n	g(n)	Δ	Δ^2	Δ^3
0	4	7	19	67
1	11	26	86	326
2	37	112	412	1612
3	149	524	2024	8024
4	673	2548	10048	40048
5	3221	12596	50096	200096
6	15817	62692	250192	1000192
7	78509	312884	1250384	5000384
8	391393	1563268	6250768	25000768
9	1954661	7814036	31251536	
10	9768697	39065572		
11	48834269			