**Now Next Rules**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now Next Rules are recursive rules that explain how to get from one number in a sequence to the next. This is different from an explicit rule that relates an independent variable (x) to a dependent variable(y).

Write a Now Next rule that describes how to get from one number to the next in each sequence.

1. 2,3,4,5,6,7,8…
2. 1,3,5,7,9,11…
3. 2,4,8,16,32,64…
4. In the book *Alice’s Adventures in Wonderland* by Lewis Carroll, Alice grows when she eats a piece of cake. If her original height is 4ft 6in and her height doubles every time she takes one bite of cake, how tall will she be after 5 bites of cake? Write a NOW NEXT rule that describes her growth.
5. The population of North Carolina in 2012 was 9,752,073 with an annual population change of about 1%. (<http://quickfacts.census.gov/qfd/states/37000.html>) If this growth rate continues, what will be the population in North Carolina in 2020? Write an NOW NEXT rule that describes the population growth.

Independent Practice

Write a Now Next rule that describes how to get from one number to the next in each sequence.

1. 1,0,-1,-2,-3,-4,-5…
2. 1,3,9,27,81…
3. -2,1,4,7,11,14…
4. A local pond is having a problem with its fish population. So many people have been fishing in this pond that a wildlife specialist says that the fish population has declined 2% each year for the past several years. Write a NOW NEXT rule that can be used to find the next year’s fish population. If the current population of the fish is estimated to be about 1000, how many fish will be in the pond five years from now if this rate of decrease continues?
5. John gets an allowance of $15 a week from his parents. He is trying to save money to buy a new cell phone. The phone that John wants is $199. How much money will he have in five weeks? If John saves all of his money, how long will it take him to save up enough money to buy a new cell phone? Write a NOW NEXT rule to show the relationship between the amount of money John has this week and the amount that he will have next week.