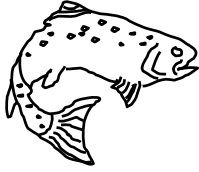


Trout Pond Exploration

NAME _____

Each spring, a trout pond is restocked with fish. That is, the population decreases each year due to natural causes, but at the end of each year, more fish are added. Here's what you need to know.



- There are currently 3000 trout in the pond.
- Due to fishing, natural death, and other causes, the population decreases by 20% each year, regardless of restocking.
- At the end of each year, 1000 trout are added to the pond.

1. Do you think the population will grow without bound, level off, oscillate, or die out? Explain why you think your conjecture is reasonable.

2. Use the table below (or some other method) to test your conjecture.

YEAR	NUMBER OF TROUT IN POND	YEAR	NUMBER OF TROUT IN POND
0	3000	13	
1		14	
2		15	
3		16	
4		17	
5		18	
6		19	
7		20	
8		21	
9		22	
10		23	
11		24	
12		25	

3. Is it possible to predict the population of the pond after a given number of years? How might you make such a prediction?

4. Let the word NEXT represent the population next year, and NOW represent the population this year. Write an equation using NEXT and NOW that represents the assumptions given above.