One Grain of Rice

NAME _____

In the book *One Grain of Rice* by Demi, the main character Rani cleverly tricks the raja into giving rice to the village. Use the story from the book to answer the questions below.

1. Estimate how many grains of rice you think Rani will have at the end of 30 days.

2. Use the chart below to record the number of grains of rice Rani would receive each day.

Day 1	Day 2	Day 3	Day 4	Day 5	**Total After 5 Days**
1 grain of rice	**2** grains of rice	grains of rice	grains of rice	grains of rice	
Day 6 grains of rice	Day 7 grains of rice	Day 8 grains of rice	Day 9 grains of rice	Day 10 **512** grains of rice	**Total After 10 Days**
Day 11 grains of rice	Day 12 grains of rice	Day 13 grains of rice	Day 14 grains of rice	Day 15 grains of rice	**Total After 15 Days**
Day 16 grains of rice	Day 17 grains of rice	Day 18 **131,072** grains of rice	Day 19 grains of rice	Day 20 grains of rice	**Total After 20 Days**
Day 21 grains of rice	Day 22 grains of rice	Day 23 grains of rice	Day 24 grains of rice	Day 25 grains of rice	**Total After 25 Days**
Day 26 grains of rice	Day 27 grains of rice	Day 28 grains of rice	Day 29 grains of rice	Day 30 grains of rice	**Total After 30 Days**

3. If the story continued and you know how many grains of rice Rani receives on Day 30, how can you determine how many grains of rice she would receive on Day 31?

How can you determine how many grains of rice she would receive on Day 35?

How can you determine how many grains of rice she would receive on Day 40?

If you know how many grains of rice she receives on a certain day, how can you determine how many grains of rice she will receive 2 days later? …10 days later?

4. Write a sentence that describes how many grains of rice Rani receives each day.

5. Write a sentence that describes the *total* number of grains of rice Rani will receive through a certain number of days.

6. Write each of your sentences from Questions 4 and 5 in the form of an equation using only numbers and symbols.

7. Test each of your equations to see if they generate the values in the table. Were your algebraic equations correct? If not, modify your equations and test them until you are certain they are correct. Record the changes you make so that you can explain to others how you arrived at your final equations.