

7A.7 Learning Opportunity

Problem Solving: Sequences



Name: _____

- 1) Mr. Miller kept track of how much gasoline his car was using. He displayed the data he collected in a table.

Gallons Used	1	2	3	n
Miles Driven	22.5	45	67.5	?

Write an equation that Mr. Miller can use to find how many miles he can drive on any number, n , of gallons of gasoline. Use the equation to determine how many miles he can drive with 15 gallons of gas in his car.

- 2) Valentina earns \$15 for 1 hour of tutoring, \$23 for 2 hours of tutoring, and \$31 for 3 hours of tutoring. Write an equation to describe this sequence.
- 3) A website has 175 hits during its first hour of operation. It has 350 hits during its second hour and 525 hits during its third hour. Write an equation to describe this sequence.
- 4) Gabriela is reading a novel that is 463 pages long. After the first day, she had 423 pages left. After 2 days, she had 383 pages left. After 3 days, she had 343 pages left. Write an equation and use it to determine the number of pages that Gabriela will have left after 8 days.



- 5) Farrah hosted a party. She had 50 party favors to give away, and she gave 3 party favors to each of her guests as they arrived at the party. Let n be a positive integer, and let $f(n)$ denote the number of party favors Farrah had before the n^{th} guest arrived. What is the formula for $f(n)$?



- 5) By arranging bowling pins in their proper order, a triangle is created. The table below shows the number of rows of bowling pins and the total number of pins in the triangle.

Rows	1	2	3	4	n
Pins	1	3	6	10	

The equation $t = \frac{n \cdot (n+1)}{2}$ can be used to find t , the total number of items in n rows. How many bowling pins would there be if 10 rows of pins were set up?

