## **Arithmetic Means**

The terms between two given terms of an arithmetic sequence are called the arithmetic means between the two terms.

Example Given the sequence with the missing terms (arithmetic means) 4, \_\_, \_\_, 22, ..., find the missing terms and describe the sequence as a function.

1 <sup>st</sup> term	2 <sup>nd</sup> term	3 <sup>rd</sup> term	4 <sup>th</sup> term	5 <sup>th</sup> term	6 <sup>th</sup> term
4			22		

Treat this like an x-y chart and find the slope. Slope is the

$$\frac{\Delta y}{\Delta x} = \frac{22 - 4}{4 - 1} = \frac{18}{3} = 6$$

Substituting m = 6 into the Point Slope Form of a Line (finding an equation of a line), we can write a rule, an equation, a function. Using (1, 4) and (4, 22) as ordered pairs.

Given Pt Slope Form of a Line		
Substitute (1, 4)		
<b>Distributive Property</b>		
Addition Prop of Equality		
Substitution		

Please take note that the common difference in an arithmetic sequence is the rate of change, the slope. f(x) = 6x - 2 is in the <u>Slope Intercept Form of a Line</u> and the slope is 6 - the same as the common difference.

By using this formula, to find the 101<sup>st</sup> term, we merely substitute 101 in to the function.

f(x) = 6x - 2f(101) = 6(101) - 2 f(101) = 604