1. Write an infinite repeating decimal using Sigma, then Find the Exact value.as a convergent infinite series.

   Solution:
   5.2323232323… = 5. + 0.23 + 0.0023 + 0.000023 + 0.00000023 + …
   After the 5, the rest is a geometric series where a1 = 0.23 and r = 0.01
   So we can get: $\boxed{5 + \sum_{n=1}^{\infty} 2.3(0.01)^{n-1}} = 5 + \frac{0.23}{1-0.01} = 5 + \frac{0.23}{0.99} = 5 + \frac{23}{99} = \boxed{\frac{518}{99}}$

2. Arithmetic Means
   Find the 2 arithmetic means between 5 and 10.
   This means we have an arithmetic sequence: 5, a_2, a_3, 10, where we must find a_2 and a_3.
   $a_n = a_1 + (n - 1)d \rightarrow a_4 = 5 + (3)d = 10 \rightarrow 3d = 5 \rightarrow d = \frac{5}{3}$
   $a_2 = 5 + \frac{5}{3} = \frac{20}{3}$ and $a_3 = \frac{20}{3} + \frac{5}{3} = \frac{25}{3}$

3. To find geometric means, follow the same procedure, except use the general term for a geometric term.

4. At this point you should be able to do the following:
   a. Find Arithmetic Means
   b. Find Geometric Means
   c, Find The Exact Value of an Infinite Repeating Decimal
   d. Given 2 values of a sequence, find a random 3rd term
   e. Find the number of terms in a sequence, given a particular term, r or d, and the sum
   f. Express a sum of terms in summation notation form

Pre-Calculus 2 Assignment 226 Thursday, March 26, 2015 Hour Name

Calculators may be used.

1.	$\sum_{n=1}^{20} 2n + 1 =$
2.	$\sum_{n=1}^{100} \frac{n+1}{2} =$
3.	In an arithmetic sequence, $a_4 = 7$ and $a_9 = 20$. Find a_{101}.
4.	$\sum_{n=1}^{8} 3(2)^n =$
5.	$\sum_{n=0}^{30} 3\left(\frac{3}{2}\right)^n =$
6.	$\sum_{n=0}^{\infty} 6\left(\frac{2}{3}\right)^n =$
7.	$\sum_{n=0}^{\infty} 10\left(\frac{4}{5}\right)^n =$
8.	$\sum_{n=1}^{\infty} 8\left(\frac{5}{3}\right)^{n-1} =$
9.	$9 + 6 + 4 + \frac{8}{3} + \ldots =$
10.	$-6 + 5 - \frac{25}{6} + \frac{125}{36} - \ldots =$