| **MODULE 12** | **SEQUENCES AND SERIES** |

Name:_____ Points:_____

Exercise 1. Find the sum.

(a) $\displaystyle\sum_{k=1}^{5}(k^2 + 2k) =$

(b) For the sequence $a_1, a_2, a_3, \ldots$ given by $3, 1, 2, -1, 3, -4, 7, -11, \ldots$ find

$\displaystyle\sum_{\ell=1}^{9} a_\ell =$

(c) For the sequence $a_1, a_2, a_3, \ldots$ given by $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \ldots$ find

$\displaystyle\sum_{n=3}^{6} a_n =$

(d)   For the arithmetic sequence given by $7, 16, 25, 34, \ldots$ find

$$\sum_{j=1}^{450} a_j =$$

(e)   For the geometric sequence given by $6, 12, 24, 48, \ldots$ find

$$\sum_{i=1}^{15} a_i =$$

(f)   For the arithmetic sequence given by $-13, -16, -19, -22, \ldots$ find

$$\sum_{k=1}^{2345} a_k =$$

(g)   For the geomteric sequence given by $-4, -2, -1, -\frac{1}{2}, \ldots$ find

$$\sum_{j=1}^{\infty} a_j =$$

(h)   For the arithmetic sequence given by $25, 29, 33, 37, \ldots$

find $\displaystyle\sum_{j=1}^{600} a_j =$

find $\displaystyle\sum_{j=1}^{199} a_j =$

find $\displaystyle\sum_{j=200}^{600} a_j =$

(i)   For the geometric sequence given by $-6, 2, -\frac{2}{3}, \frac{2}{9}, \ldots$ find

$\displaystyle\sum_{n=1}^{\infty} a_n =$

(j)   For the arithmetic sequence given by $2, 4, 6, 8, 10, \ldots$ find

$\displaystyle\sum_{k=1}^{\infty} a_k =$