

**3)** (10 pts) ANL (Summations and Recurrence Relations)

Determine the following summation in terms of  $n$  (assume  $n$  is a positive integer 2 or greater), expressing your answer in the form  $an^3 + bn^2 + cn$ , where  $a$ ,  $b$  and  $c$  are rational numbers. (Hint: Try rewriting the summation into an equivalent form that generates less algebra when solving.)

$$\sum_{i=n^2-3}^{n^2+n-4} (i + 4)$$