

3) (5 pts) ANL (Summations)

What is the closed form of the following summation? Express your result as a polynomial, in n , in standard form.

$$\sum_{i=0}^{n^4} 6i$$

$$\sum_{i=0}^{n^4} 6i = 6 \sum_{i=1}^{n^4} i = \frac{6n^4(n^4 + 1)}{2} = 3n^4(n^4 + 1) = \mathbf{3n^8 + 3n^4}$$

Grading: 1 pt for factoring out 6 or equivalent, 2 pts for applying the summation formula, 1 pt for dividing 6 by 2, 1 pt for multiplying out