Name:

1. **(4 points)** Consider the vector $t = (t_1, t_2, t_3, t_4, t_5)$. Write down the entries of the following vectors. In each case your answer should be of the form $v = (\cdot, \cdots, \cdot)$ where you have explicitly filled in the entries of the vector v.

   - $v = t + 3\mathbf{1}_5$

   - $v = t_{2:5} - t_{1:4}$

   - $v = (\mathbf{1}_3, t)$

2. Consider an 6-dimensional vector x. Express each of the following operations on x in terms of an inner product $c^T x$ by exhibiting the vector c. In each case your answer should be of the form $c = (\cdot, \cdots, \cdot)$ where the six entries of c are explicit numbers.

   - The last entry of x minus first entry of x.

   - The sum of the first three entries of x minus the sum of the last three entries of x.

   - The sum of the following two numbers:

     - The average of the first four entries of x, **and**
     - the average of the last two entries of x.