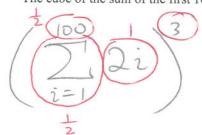
[3 POINTS] Translate into summation notation. YOU DO NOT NEED TO COMPUTE THE SUM.

"The cube of the sum of the first 100 positive even integers"



[7 POINTS] Use summation rules/shortcuts to compute the sum  $\sum_{i=1}^{100} (4-i-3i^2)$ . 2  $4(100) + \frac{100(101)}{2} + \frac{3 \cdot 100(10)(201)}{6}$  = (-1019700)

[10 POINTS] Use summation rules/shortcuts to compute the sum of the form  $\sum_{i=1}^{n} f(x_i) \Delta x$  for

$$f(x) = x^2 + 3x;$$
  $x = 4.1, 4.2, 4.3, ..., 5.0;$   $\Delta x = 0.1;$   $n = 10$ 

$$X_{i} = 4 + \frac{i}{10}$$

$$= 0.1 \sum_{i=1}^{10} \left[ (4 + \frac{i}{10})^2 + 3(4 + \frac{i}{10}) \right]$$

$$= 0.1 \sum_{i=1}^{10} \left( 16 + \frac{4i}{5} + \frac{i^2}{100} + 12 + \frac{3i}{10} \right)$$

$$= 0.1 \sum_{i=1}^{10} \left(28 + \frac{11i}{10} + \frac{i^2}{100}\right)$$

$$= 0.1 \left(28(10) + \frac{11}{10} + \frac{1}{100} + \frac{10(1)(21)}{6}\right)$$