Adding a sequence in the form: $1^3 + 2^3 + \ldots + n^3$:

A. A sequence in this form reduces to:

$$\sum_{i=1}^{n} i^3 = 1^3 + 2^3 + \ldots + n^3 = \left(\frac{n \cdot (n+1)}{2}\right)^2$$

B. Notice that this expression is the same thing as: $(1 + 2 + \ldots + n)^2$

1. Multiply the last number by that number plus 1, then divide by 2.
2. Square this result.

Ex [1] $1^3 + 2^3 + \ldots + 10^3 =$_________.

a) Using the expression this reduces to: $^{(10)(11)}/_2 = 5 \times 11 = 55$.

b) $55^2 = 3025$. See *Squaring A Number Ending In 5*.

c) The answer is 3025.

Ex [2] $1^3 + 2^3 + \ldots + 15^3 =$_________.

a) Using the expression this reduces to: $^{(15)(16)}/_2 = 15 \times 8 = 120$.

b) $120^2 = 14400$.

c) The answer is 14400.