1. Which of the numbers below is equal to the following summation: \begin {align}\displaystyle{\Sigma_{i=1}^3 i^2}\end {align}? **1 / 1 puntos**

- ○ $30$
- ◉ $14$
- ○ $1$
- ○ $9$

✓ **Correcto**

We compute $\Sigma_{i=1}^{3} i^2 = 1^2 + 2^3 + 3^2 = 14$

2. Suppose that $A = \Sigma_{k=1}^{100} k^4$ and $B = \Sigma_{j=1}^{100} j^4$ **1 / 1 puntos**

Which of the following statements is true?

- ○ There is not enough information to do the problem
- ◉ $A = B$
- ○ $A > B$
- ○ $B > A$

✓ **Correcto**

A = B. Both summations evaluate to the same number, since $k$ and $j$ are just dummy indices.

3. Which of the numbers below is equal to the summation $\Sigma_{i=1}^{10} 7$?

1 / 1 puntos

- (●) $70$
- ( ) $7$
- ( ) $55$
- ( ) $0$

✓ **Correcto**

According to one of our Sigma notation simplification rules, this summation is just equal to $10$ copies of the number $7$ all added together, and so we get $10 \times 7 = 70$.

4. Suppose that $X = \Sigma_{i=1}^{5} i^3$ and $Y = \Sigma_{i=1}^{5} i^4$.

1 / 1 puntos

Which of the following expressions is equal to the summation $\Sigma_{i=1}^{5}(2i^3 + 5i^4)$?

- ( ) $7$
- ( ) $X + Y$
- (●) $2X + 5Y$
- ( ) $3375$

✓ **Correcto**

To get here, you apply two of our Sigma notation simplification rules $\Sigma_{i=1}^{5} 2i^3 + 5i^4 = 2(\Sigma_{i=1}^{5} i^3) + 5(\Sigma_{i=1}^{5} i^4) = 2X + 5Y$

5. Which of the following numbers is the mean $\mu_Z$ of the set $Z = \{-2, 4, 7\}$?

1 / 1 puntos

- ( ) $9$
- ( ) $4$
- (●) $3$
- ( ) \begin {align} \frac{13}{3}\end {align}

✓ **Correcto**

To get the mean of a set of numbers, you need to perform two steps: first add them all up (in this case getting $-2 + 4 + 7 = 9$), and then divide by the number of elements in the set (in this case that number is $3$).

So you should obtain \mu_Z = \begin {align} \frac{9}{3} = 3\end {align}, which you did!

6. Suppose the set $X$ has five numbers in it: $X = \{x_1, x_2, x_3, x_4, x_5\}$. Which of the following expression represents the mean of the set $X$?

0 / 1 puntos

- (●) \begin {align}\frac15 [\sum_{{\large i=1}}^5 (x_i-\mu_X)^2]\end {align}
- ( ) \begin {align}\frac1N [\sum_{{\large i=1}}^N x_i]\end {align}
- ( ) \begin {align}\frac15 [\sum_{{\large i=1}}^5 x_i]\end {align}
- ( ) $\sum_{i=1}^{5} x_i$