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Practice quiz on Simplification Rules and Sigma Notation

PUNTOS TOTALES DE 6

1. Which of the numbers below is equal to the following summation: $\Sigma_{i=1}^{3} i^2$? 1 / 1 punto

- 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 punto

Which of the following statements is true?

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

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

1 / 1 punto

- (●) 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 punto

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

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

✓ **Correcto**

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

5. Which of the following numbers is the mean μ_Z of the set $Z = \{-2, 4, 7\}$? **1 / 1 punto**

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

✓ **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 $\mu_Z = \frac{9}{3} = 3$, 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? **1 / 1 punto**

- ( ) $\frac{1}{N}[\sum_{i=1}^{N} x_i]$
- ( ) $\sum_{i=1}^{5} x_i$
- ( ) $\frac{1}{5}[\sum_{i=1}^{5}(x_i - \mu_X)^2]$
- (●) $\frac{1}{5}[\sum_{i=1}^{5} x_i]$

✓ **Correcto**