Graded quiz on Sets, Number Line, Inequalities, Simplification, and Sigma Notation

NÚMERO TOTAL DE PONTOS 13

1. Let $B = \{3, 5, 10, 11, 14\}$. Is the following statement true or false: $3 \notin B$ 1 ponto

- (•) False
- ( ) True

2. Let $A = \{1, 3, 5\}$ and $B = \{3, 5, 10, 11, 14\}$. Which of the following sets is equal to the union $A \cup B$? 1 ponto

- ( ) $\{1, 10, 18\}$
- ( ) $\{3, 5, 10, 11, 14\}$
- (•) $\{1, 3, 5, 10, 11, 14\}$
- ( ) $\{1, 3, 5, 3, 5, 10, 11, 14\}$

3. How many real numbers are there between the integers 1 and 4? 1 ponto

- ( ) None
- ( ) 2
- (•) Infinitely many
- ( ) 4

4. Suppose I tell you that x and y are two real numbers which make the statement $x \geq y$ true. Which pair of numbers ***cannot*** be values for x and y? 1 ponto

- ( ) $x = 2$ and $y = 1$

- ○ $x = 10$ and $y = 10$
- ◉ $x = -1$ and $y = 0$
- ○ $x = 5$ and $y = 3.3$

5. Suppose that z and w are two positive numbers with $z < w$. Which of the following inequalities is false? 1 ponto

- ◉ $-5z < -5w$
- ○ $w - 7 > z - 7$
- ○ $-z > -w$
- ○ $z + 3 < w + 3$

6. Find the set of all x which solve the inequality $-2x + 5 \leq 7$ 1 ponto

- ◉ $x \geq -1$
- ○ $x \geq -6$
- ○ $x \leq -1$
- ○ $x = -1$

7. Which of the following real numbers is not in the closed interval $[2, 3]$ 1 ponto

- ◉ 1
- ○ 2.1
- ○ 2
- ○ 3

8. 1 ponto

Which of the following intervals represents the set of all solutions to:

$-5 \leq x + 2 < 10$?

- $[-7, 8]$
- **$[-7, 8)$** ✓
- $[-5, 10)$
- $(7, 8)$

9. Which of the numbers below is equal to the following summation: $\Sigma_{k=2}^{5} 2k$? 1 ponto

- **28** ✓
- 4
- 10
- 14

10. Suppose we already know that $\Sigma_{k=1}^{20} k = 210$. Which of the numbers below is equal to $\Sigma_{k=1}^{20} 2k$? 1 ponto

- 40
- **420** ✓
- 2
- 210

11. Which of the numbers below is equal to the summation $\Sigma_{i=2}^{10} 7$? 1 ponto

- **63** ✓
- 7
- 70

- ○ 48

12. Which of the following numbers is the variance of the set $Z = \{-2, 4, 7\}$? 1 ponto

- ○ 42
- ○ $\sqrt{14}$
- ○ 69
- ◉ 14

13. Which of the following sets does *not* have zero variance? (hint: don't do any calculation here, just think!) 1 ponto

- ◉ $\{2, 5, 9, 13\}$
- ○ $\{0, 0, 0, 0, 0, 0, 0\}$
- ○ $\{5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5\}$
- ○ $\{1, 1, 1, 1\}$

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