$\bigcirc \ x \leq -1$ $\bigcirc \ x \geq -6$

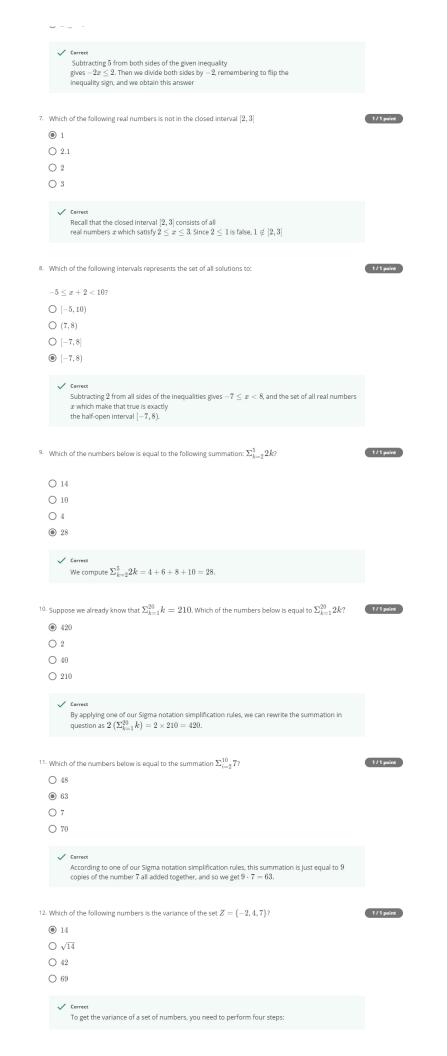
✓ Congratulations! You passed! TO PASS 75% or higher

Keep Learning

GRADE 92.30%

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

Simplification, and Sigma Notation LATEST SUBMISSION GRADE 92.3%		
1.	Let $B=\{3,5,10,11,14\}.$ Is the following statement true or false: $3\not\in B$ $ \bigcirc \ \ \text{False}$ $ \bigcirc \ \ \text{True}$	0/1 point
	Incorrect $ \begin{tabular}{ll} The symbol \notin stands for "is not an element of." Since 3 is in fact an element of the set B, the given statement is not true. \\ \end{tabular} $	
2.	Let $A=\{1,3,5\}$ and $B=\{3,5,10,11,14\}$. Which of the following sets is equal to the union $A\cup B$?	1/1 point
	○ {1,10,18} ○ {3,5,10,11,14}	
	 ● {1,3,5,10,11,14} ○ {1,3,5,3,5,10,11,14} 	
	Correct The union of two sets consists precisely of the elements that are in at least one of the two sets. That is precisely what is listed here.	
3.	How many real numbers are there between the integers 1 and 4? $ \bigcirc \ 2 $ $ \bigcirc \ \ \ \ \ \ \ \ \ \ $	1/1 point
	Correct There are in fact infinitely many real numbers between any pair of distinct integers, or indeed any pair of distinct real numbers!	
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 $\underbrace{cannot}_{}$ be values for x and y ? $\begin{array}{c} x = 2 \text{ and } y = 1 \\ x = 10 \text{ and } y = 10 \\ x = -1 \text{ and } y = 0 \\ x = 5 \text{ and } y = 3.3 \end{array}$	1/1 point
	\checkmark Correct Recall that the statement $x \geq y$ means that x is either equal to y or x is to the right of y on the real number line. Since -1 is actually to the left of 0 , these cannot be values for x and y .	
	Suppose that z and w are two positive numbers with $z < w$. Which of the following inequalities is false? $\begin{array}{c} \bigcirc z+3 < w+3 \\ \bigcirc w-7 > z-7 \\ \hline \bullet \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	1/1 point
	\checkmark Correct If we start with $z < w$ and multiply both sides by -5 , we need to flip the less-than sign, which would give $-5z > -5w$. For an example, try $z=1$ and $y=2$ and see what happens!	
6.	Find the set of all x which solve the inequality $-2x+5 \le 7$ $\bigcirc \ x = -1$	1/1 point



First compute the mean (which is 3)

Then calculate all the squared differences between the numbers in the set and this mean (here you get 25,1,16)

Then add all these up (here you get 42)

Then divide by the number of elements in the set (which is 3).

Therefore, the variance of ${\cal Z}$

$$=\,\frac{1}{3}\,[(-2-3)^2+(4-3)^2+(7-3)^2]$$

$$=\,\frac{1}{3}\left[25+1+16\right]=\frac{42}{3}=14$$

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

- \bigcirc {1,1,1,1}
- \bigcirc {0,0,0,0,0,0,0}
- $\bigcirc \ \{5,5,5,5,5,5,5,5,5,5,5,5,5,5\}$
- **③** {2, 5, 9, 13}



Intuitively, the numbers in this set are spread out.