WRITING INEQUALITIES

LEARNING GOAL

1. I can match an inequality to a situation it represents, solve it, and then explain what the solution means in the situation.

COMMON PHRASES FOR INEQUALITIES

Inequality symbol	Meaning	Other phrases
$<$	is less than	• is fewer than • is below
$>$	is greater than	• is more than • is above
$\leq$	is less than or equal to	• is at most • is no more than
$\geq$	is greater than or equal to	• is at least • is no less than

Choose the inequality that best matches each given situation. Explain your reasoning.

Example: The Chemistry Club is experimenting with different mixtures of water with a certain chemical (sodium polyacrylate) to make fake snow. To make each mixture, the students start with some amount of water, and then add $\frac{1}{7}$ of that amount of the chemical, and then 9 more grams of the chemical. The chemical is expensive, so there can't be more than a certain number of grams of the chemical in any one mixture.

1. $\frac{1}{7}x + 9 \leq 26.25$

2. $9x + \frac{1}{7} \leq 26.25$

3. $26.26x + 9 \leq \frac{1}{7}$

4. $\frac{1}{7}x + 26.25 \leq 9$

Explanation

Choose the inequality that best matches each given situation. **Explain your reasoning.**

1. The Garden Club is planting fruit trees in their school's garden. There is one large tree that needs 5 pounds of fertilizer. The rest are newly planted trees that need $\frac{1}{2}$ pound fertilizer each.

1. $25x + 5 \leq \frac{1}{2}$

2. $\frac{1}{2}x + 5 \leq 25$

3. $\frac{1}{2}x + 25 \leq 5$

4. $5x + \frac{1}{2} \leq 25$

Explanation

Choose the inequality that best matches each given situation. **Explain your reasoning.**

2. The Hiking Club is on a hike down a cliff. They begin at an elevation of 12 feet and descend at the rate of 3 feet per minute.

1. $37x - 3 \geq 12$
2. $3x - 37 \geq 12$
3. $12 - 3x \geq -37$
4. $12x - 37 \geq -3$

Explanation

Choose the inequality that best matches each given situation. **Explain your reasoning.**

3. The Science Club is researching boiling points. They learn that at high altitudes, water boils at lower temperatures. At sea level, water boils at $212^\circ F$. With each increase of 500 feet in elevation, the boiling point of water is lowered by about $1^\circ F$.

1. $212 - \frac{1}{500}e < 195$

2. $\frac{1}{500}e - 195 < 212$

3. $195 - 212e < \frac{1}{500}$

4. $212 - 195e < \frac{1}{500}$

Explanation

ASSIGNMENT

Choose one of the situations from the previous 3 slides
1. Explain what the variable and each part of the inequality represent
2. Write a question that can be answered by the solution to the inequality
3. Show how you solved the inequality
4. Explain what the solution means in terms of the situation

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