

Grade 6 Mathematics Sample ER Item Claim 2

MAT.06.ER.2.000EE.C.172 Claim 2

Sample Item ID:	MAT.06.ER.2.000EE.C.172
Grade:	06
Primary Claim:	Claim 2: Problem Solving Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.
Secondary Claim(s):	Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.
Primary Content Domain:	Expressions and Equations
Secondary Content Domain(s):	
Assessment Target(s):	2 C: Interpret results in the context of a situation. 2 A: Apply mathematics to solve well-posed problems arising from everyday life, society, and the workplace. 1 F: Reason about and solve one-variable equations and inequalities.
Standard(s):	6.EE.5
Mathematical Practice(s):	1, 2, 4
DOK:	2
Item Type:	ER
Score Points:	3
Difficulty:	H
Key:	See Sample Top-Score Response.
Stimulus/Source:	
Target-specific attributes (e.g., accessibility issues):	
Notes:	Part of PT set

Part A

Ana is saving to buy a bicycle that costs \$135. She has saved \$98 and wants to know how much more money she needs to buy the bicycle.

The equation $135 = x + 98$ models this situation, where x represents the additional amount of money Ana needs to buy the bicycle.

- When substituting for x , which value(s), if any, from the set

$\{0, 37, 98, 135, 233\}$ will make the equation true?

- Explain what this means in terms of the amount of money needed and the cost of the bicycle.

Part B

Ana considered buying the \$135 bicycle, but then she decided to shop for a different bicycle. She knows the other bicycle she likes will cost more than \$150.

This situation can be modeled by the following inequality.

$$x + 98 > 150$$

- Which values, if any, from -250 to 250 will make the inequality true? If more than one value makes the inequality true, identify the least and greatest values that make the inequality true.
- Explain what this means in terms of the amount of money needed and the cost of the bicycle.

Sample Top-Score Response:

Part A

37 is the only value in the set that makes the equation true.

This means that Ana will need exactly \$37 more to buy the bicycle.

Part B

The values from 53 to 250 will make the inequality true.

This means that Ana will need from \$53 to \$250 to buy the bicycle.

Scoring Rubric:

Responses to this item will receive 0–3 points, based on the following:

3 points: The student shows a thorough understanding of equations and inequalities in a contextual scenario, as well as a thorough understanding of substituting values into equations and inequalities to verify whether or not they satisfy the equation or inequality. The student offers a correct interpretation of the equality and the inequality in the context of the problem. The student correctly states that 37 will satisfy the equation and that the values from 53 to 250 will satisfy the inequality.

2 points: The student shows a thorough understanding of substituting values into equations and inequalities to verify whether or not they satisfy the equation or inequality but limited understanding of equations or inequalities in a contextual scenario. The student correctly states that 37 will satisfy the equation and that the values from 53 to 250 will satisfy the inequality, but the student offers an incorrect interpretation of the equality or the inequality in the context of the problem.

1 point: The student shows a limited understanding of substituting values into equations and inequalities to verify whether or not they satisfy the equation or inequality and a limited understanding of equations and inequalities in a contextual scenario. The student correctly states that 37 will satisfy the equation, does not state that the values from 53 to 250 will satisfy the inequality, and offers incorrect interpretations of the equality and the inequality in the context of the problem. **OR** The student correctly states that the values from 53 to 250 will satisfy the inequality, does not state that 37 satisfies the equation, and offers incorrect interpretations of the equality and the inequality in the context of the problem.

0 points: The student shows little or no understanding of equations and inequalities in a contextual scenario and little or no understanding of substituting values into equations and inequalities to verify whether or not they satisfy the equation or inequality. The student offers incorrect interpretations of the equality and the inequality in the context of the problem, does not state that 37 satisfies the equation, and does not state that the values from 53 to 250 will satisfy the inequality.