MAT.08.ER.3.000EE.D.137 Claim 3

Sample Item ID:	MAT.08.ER.3.000EE.D.137
Grade:	08
Primary Claim:	**Claim 3: Communicating Reasoning** Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.
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):	3 D: Use the technique of breaking an argument into cases. 3 A: Test propositions or conjectures with specific examples. 3 E: Distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in the argument—explain what it is. 3 G: At later grades, determine conditions under which an argument does and does not apply. (For example, area increases with perimeter for squares, but not for all plane figures.) 1 D: Analyze and solve linear equations and pairs of simultaneous linear equations.
Standard(s):	8.EE.7
Mathematical Practice(s):	1, 3, 7
DOK:	2
Item Type:	ER
Score Points:	3
Difficulty:	M
Key:	See Sample Top-Score Response.
Stimulus/Source:	
Claim-Specific Attributes (e.g., accessibility issues):	
Notes:	Part of PT set The purpose of this item is to determine students' familiarity with the different numbers of solutions that are possible when solving a linear equation.

Consider the equation $3(2x+5)=ax+b$.

Part A

Find one value for *a* and one value for *b* so that there is exactly one value of *x* that makes the equation true.

$a=$ ☐

$b=$ ☐

Explain your reasoning.

Part B

Find one value for *a* and one value for *b* so that there are infinitely many values of *x* that make the equation true.

$a=$ ☐

$b=$ ☐

Explain your reasoning.

Sample Top-Score Response:

Part A

A = 5; b = 16 When you put these numbers in for *a* and *b*, you get a solution of x = 1.

Part B

a=6; b = 15; When you put these numbers in for *a* and *b*, you get a solution of 0 = 0, so there are infinitely many solutions, not just one.

Scoring Rubric:

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

3 points: The student shows a thorough understanding of the number of possible solutions of linear equations. The student gives acceptable values for *a* and *b* in both parts and provides complete and correct explanations.

2 points: The student shows a partial understanding of the number of possible solutions of linear equations. The student must show at least some understanding in *Part B* to earn 2 points (e.g., *Part A* is incorrect and *Part B* is correct, or *Part A* and the values for *a* and *b* in *Part B* are correct but the explanation in *Part B* is incorrect).

1 point: The student shows a limited understanding of the number of possible solutions of linear equations. *Part A* is correct, but inconsistent or no understanding is shown in *Part B*.

0 points: The student shows inconsistent or no understanding of the number of possible solutions of linear equations.