Anchor Paper Scoring and Rationales

Task: Equality Possibilities **Student: A**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	• The student demonstrates an understanding of equality which led to multiple valid and correct solutions of 11. • The student could move to an Advanced score by explaining their strategy of increasing and decreasing amounts to quickly come up with new ways to keep a difference or sum of 11.
Problem Solving	Advanced	• The student produced multiple efficient solutions of 11 relevant to the problem. • The students confirmed the reasonableness of one set of their equations: 7 + 4 = 8 + 3
Communication and Reasoning	Proficient	• The student supported one solution with an explanation of counting. • The student could move to a score of Advanced by using more mathematical language (balanced, equivalent, increase, decrease) to support their solution steps.
Representations and Connections	Proficient	• The student used 15 equations to model equivalent relationships. • The student could move to a score of Advanced by making connections to the tens they subtracted using a number line, hundreds chart, calculator, etc. or by sharing their strategy for producing multiple equations for 11.

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Task: Equality Possibilities **Student: B**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Emerging	• The student did not demonstrate an understanding of equality concepts. • The student applied limited mathematical concepts to create a string of unbalanced expressions.
Problem Solving	Developing	• The student's problem solving strategy displays a limited understanding of equality • The student does not use a problem solving strategy that is relevant to the problem.
Communication and Reasoning	Emerging	• The student does not provide correct reasoning or justification to support their work. • The student uses no mathematical language to communicate thinking.
Representations and Connections	Emerging	• The student does not use a representation that models a balanced equation. • The student could move to a score of Developing by using a number balance to model and correct their thinking.

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Task: Equality Possibilities **Student: C**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	• The student demonstrated an understanding of equality concepts. (3 x 3 = 1 x 9). The student states that both sides of equation make the same number. • The student could move to a score of Advanced by showing another example.
Problem Solving	Proficient	• The student confirms the solution with a picture and an explanation showing that both sides of the equation are the same. • The student could move to a score of Advanced by using their strategy to create more examples.
Communication and Reasoning	Proficient	• The student supports their reasoning with a picture and a written explanation. • The student could move to a score of Advanced by explaining how their two pictorial representations are related.
Representations and Connections	Proficient	• The student used a representation to model their problem. • The student could move to a score of Advanced by creating more examples to connect and extend their thinking and deepen their understanding.

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Task: Equality Possibilities **Student: D**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	• The student demonstrates an understanding of equality by providing five examples of equivalent equations. • The student makes a generalization of the identity property (times one).
Problem Solving	Proficient	• The student's problem solving strategy demonstrates an understanding of equality. • The student produces solutions relevant to the problem and confirms the reasonableness of one solution.
Communication and Reasoning	Proficient	• The student demonstrates reasoning for one equation. • The student uses mathematical language to communicate their thinking when describing what happens when you multiply by 1.
Representations and Connections	Proficient	• The student uses five representations to model the problem. • The student makes a connection to the identity property of multiplication.

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Task: Equality Possibilities **Student: E**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	• The student demonstrates an understanding of equality. • The student produced a valid and correct solution.
Problem Solving	Proficient	• The student's problem solving strategy displayed an understanding of equality. • The student confirms the reasonableness of their solution with several representations.
Communication and Reasoning	Proficient	• The student justifies their solution steps. • The student supports the claim that their equation is true with evidence.
Representations and Connections	Proficient	• The student uses multiple representations (fact families, pictures) to model their solution. • The student could move to a score of Advanced by creating more solutions and demonstrating connections among each solution.

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Task: Equality Possibilities **Student: F**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	• The student demonstrates an understanding of equality and the computation associated with the task. • The student applies their understanding of equality leading to numerous valid and correct solutions.
Problem Solving	Proficient	• The student's problem solving strategy displays an understanding of equality. • The student produces numerous solutions relevant to the task and confirms the reasonableness of two solutions.
Communication and Reasoning	Proficient	• The student demonstrates reasoning for two solutions. • The student uses mathematical language to communicate thinking (They both equal…)
Representations and Connections	Developing	• The student makes several incomplete representations to model the problem. • The student could move to a score of Proficient by using the equal symbol in their solutions and by making a mathematical connection for at least one solution.

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Task: Equality Possibilities **Student: G**

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	• The student demonstrates an understanding of the concepts and skills associated with this equality task. • The student applies mathematical skills which lead to several valid and correct solutions.
Problem Solving	Advanced	• The student's problem solving strategy for creating eight equivalent equations is both well developed and efficient.
Communication and Reasoning	Proficient	• The student justifies solution steps. • The student could move to a score of Advanced by using more precise mathematical language and by being more detailed in explaining their strategy for finding equivalencies.
Representations and Connections	Advanced	• The student uses representations to analyze relationships and extend thinking. • The student uses mathematical connections to deepen understanding. For example, the student frequently takes a basic fact to create a larger friendly number. ("..5 plus 8 equals 13 so 50 plus 80 would be 130.")