**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. |

**Anchor Paper Scoring and Rationales**

**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. |

**Anchor Paper Scoring and Rationales**

**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. |

**Anchor Paper Scoring and Rationales**

**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. |

**Anchor Paper Scoring and Rationales**

**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.”) |