

Anchor Paper Scoring and Rationales - Task: Full Parking Lot

Name: Student A

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student demonstrates an understanding of the concepts and skills associated with the task and arrives at a correct solution of 13 cars and 7 motorcycles. The student correctly set up a system of linear equations and solved the system correctly using substitution. The solution is then confirmed with a labeled diagram of the parking lot and corresponding arithmetic.
Problem Solving	Proficient	The student's strategy of creating a system of linear equations and solving by substitution shows an understanding of the underlying math concepts. The student produces a solution that is relevant to the problem.
Communication and Reasoning	Proficient	The student reasoning is seen in the use of "m" and "c" as the variables and the showing of correct steps in the solving process. The student supports their claim with a diagram that confirms the solution.
Representations and Connections	Proficient	The student's diagram demonstrates the use of representations that model the task and is accurate. The diagram confirms the solution obtained through solving a system of linear equations. The student makes mathematically correct connections in checking their work arithmetically.

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Name: Student B

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates an understanding of the concepts and skills associated with the task and arrives at a correct solution of 13 cars and 7 motorcycles. The student correctly set up a system of linear equations and solved the system correctly using elimination.
Problem Solving	Advanced	The student's strategy of creating a system of linear equations and solving by elimination shows an understanding of the underlying math concepts. The student produces a solution that is relevant to the problem. The problem solving strategy of elimination is one of the most efficient for this system of linear equations.
Communication and Reasoning	Proficient	The student reasoning is seen in the use of "m" and "c" as the variables and the showing of correct steps in the solving process.
Representations and Connections	Proficient	The student's use of "m" and "c" in the system of equations shows representations that model the task and are accurate.

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Name: Student C

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student demonstrates an understanding of the concepts and skills associated with the task and arrives at a correct solution of 13 cars and 7 motorcycles. The student correctly set up a system of linear equations and solved the system correctly using substitution. The solution is then confirmed with corresponding arithmetic and a written explanation of the solving process.
Problem Solving	Proficient	The student's strategy of creating a system of linear equations and solving by substitution shows an understanding of the underlying math concepts. The student produces a solution that is relevant to the problem.
Communication and Reasoning	Advanced	The student reasoning is seen in the use of "m" and "c" as the variables and the showing of correct steps in the solving process. The student supports their claim with a comprehensive written explanation that communicates their thinking.
Representations and Connections	Proficient	The student's use of "m" and "c" in the system of equations shows representations that model the task and are accurate.

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Name: Student D

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates an understanding of the concepts and skills associated with the task and arrives at a correct solution of 13 cars and 7 motorcycles. The student correctly set up a system of linear equations and solved the system correctly by graphing on Desmos.
Problem Solving	Advanced	The student's strategy of creating a system of linear equations and solving by graphing on Desmos and finding the point of intersection shows an understanding of the underlying math concepts. The student produces a solution that is relevant to the problem. The problem solving strategy of graphing on Desmos is one of the most efficient for this system of linear equations.
Communication and Reasoning	Proficient	The student uses the correct mathematical term of intersection to communicate how they obtained their solution by graphing.
Representations and Connections	Proficient	The student's sketch of the Desmos graph with the labeled point of intersection shows a representation with accurate labels to model the problem.

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Name: Student E

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrates a partial understanding of the concepts and skills associated with the task and arrives at a correct solution of 13 cars and 7 motorcycles. Although a diagram is not course appropriate mathematical understanding for a student that has completed study of systems of linear equations, the written explanation of their process show a partial understanding of the concepts.
Problem Solving	Proficient	The student produces a solution relevant to the problem and confirms the reasonableness of the solution with arithmetic.
Communication and Reasoning	Proficient	The student reasoning is seen in the written explanation that communicates their thinking along with the corresponding diagram and arithmetic.
Representations and Connections	Proficient	The student's diagram of the parking lot with the number of wheels in each parking space shows a representation with accurate labels to model the problem.

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Name: Student F

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Emerging	The student demonstrates no understanding of the concepts and skills associated with the task. Although the student obtains a correct solution, a diagram with no labels or explanation of thinking is not course appropriate mathematical understanding for a student that has completed study of systems of linear equations.
Problem Solving	Developing	The problem solving strategy of a diagram shows a limited understanding of the mathematical concepts. Although a correct solution is obtained, it is not confirmed in any way.
Communication and Reasoning	Emerging	No reasoning or justification of the solution is provided.
Representations and Connections	Developing	The student's diagram with no further explanation or labels is a limited representation of the problem. Only a partial mathematical connection of dots to number of wheels is made.