

Anchor Paper Scoring and Rationales - Task: Radical Rocks

Name: Student A

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student applies mathematical concepts and skills associated with the task which lead to an incomplete or incorrect solution. The student understands that the point of intersection represented a turning point within the context of the problem but is unable to correctly identify the correct solution from the graph.
Problem Solving	Proficient	The student produces a solution relevant to the problem and uses the graph to confirm the reasonableness of the solution.
Communication and Reasoning	Proficient	The student demonstrates reasoning and supports arguments and claims with evidence. The student identifies that the second equation starts higher but becomes less expensive when it crosses the first equation.
Representations and Connections	Proficient	The student uses a representation with appropriate scales and accurate labels to explore and model the problem. The student uses the graph to make connections to the context of the problem.

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Name: Student B

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Advanced	The student uses relationships among mathematical concepts which lead to a valid and correct solution. The student provides their thinking for the development of the equations.
Problem Solving	Proficient	The problem-solving strategy displays an understanding of the underlying mathematical concepts. The student finds a mathematical approach to correctly determine the number of hours for each equation.
Communication and Reasoning	Proficient	The student demonstrates reasoning and/or justifies solution steps that support their claims using evidence from their determination of the point of intersection. The student accurately describes the significance of the point of intersection.
Representations and Connections	Proficient	The student accurately uses a graphical representation, with labels, to explore and model the problem. The arithmetic solution produces correct solutions.

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Name: Student C

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrates a partial understanding of concepts and skills associated with the task. Although the conclusion is correct, the student calculates 40% of the original hourly rate but applies that value as the new hourly rate.
Problem Solving	Proficient	The student demonstrates appropriate problem-solving strategies that displayed an understanding of the underlying mathematical concepts. The student uses algebraic representations to solve the problems.
Communication and Reasoning	Developing	The student reasoning or justification of steps is limited. The student makes a claim with little evidence provided to support the claim.
Representations and Connections	Developing	The student uses an incomplete or limited representation to model the problem which does not support the conclusion. The student provides two tables of values but only one graph. Student explanations do not refer to the graph for justification.

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Name: Student D

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student demonstrates a partial understanding of concepts and skills associated with the task leading to an incomplete solution. The student calculates 40% of the original hourly rate but applies that value as the new hourly rate.
Problem Solving	Proficient	The problem-solving strategy displays an understanding of the underlying mathematical concept. The student correctly solves the problem algebraically, but the second equation is incorrect leading to an incorrect solution.
Communication and Reasoning	Developing	The student used limited mathematical language to partially communicate thinking. The graph is not used to justify which coupon offered the better deal and support for their conclusion is not provided.
Representations and Connections	Developing	The student uses an incomplete or limited representation to model the problem. The scale used for the x-axis is inappropriate as the point of intersection is not evident on the graph.

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Name: Student E

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Proficient	The student demonstrates an understanding of concepts and skills associated with the task. Equations are correctly determined and the values from the table are used to justify a correct conclusion.
Problem Solving	Proficient	The problem-solving strategy displays an understanding of the underlying mathematical concept. Although the graph does not support the conclusion, the tables of values do.
Communication and Reasoning	Proficient	The student supports arguments and claims with evidence from the tables of values and indicates the point of intersection is where they would meet.
Representations and Connections	Developing	The student uses an incomplete or limited representation to model the problem. The student indicates that there is a point of intersection at 18 but the graph does not justify this conclusion. Eighteen could be an estimate for the y-coordinate but does not represent a point on the graph.

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Name: Student F

Criteria	Performance Level (Advanced, Proficient, Developing, Emerging)	Rationale
Mathematical Understanding	Developing	The student applies mathematical concepts and skills that lead to an incomplete or incorrect solution. The student correctly determines 40% of 8 but subtracts the value from the constant value of 13 representing fixed cost of the rental.
Problem Solving	Emerging	A problem-solving strategy is not evident and the student does not produce a solution that is relevant to the problem. The student does not provide any strategies for determining the number of hours for each option when given \$35.00 to spend.
Communication and Reasoning	Emerging	The student does not provide evidence to support arguments and claims and no mathematical language is used to communicate thinking. The answer for finding the number of hours for a total of \$35.00 is not relevant to the context of the problem and has no explanation to support the conclusion.
Representations and Connections	Developing	The student uses an incomplete or limited representation to model the problem and is unable to use the representation to make connections to answer questions based on the context of the problem.