

# Wyoming Mathematics 2009

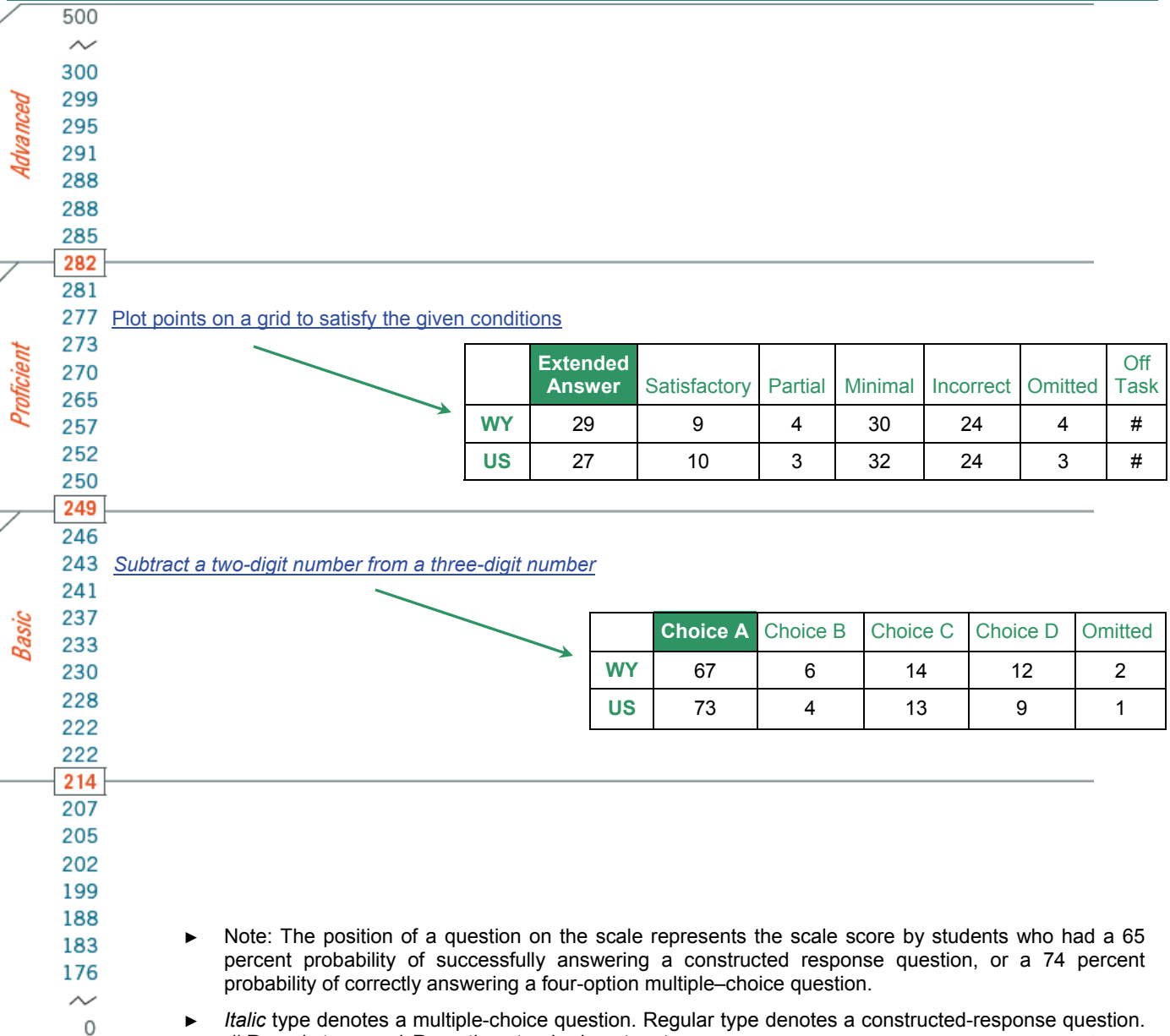


## Grade 4 Report

### Item Map and Performance Snapshot

The National Assessment of Educational Progress (NAEP) uses both multiple choice and constructed-response test items to assess fourth graders' mathematical skills in five categories: number properties & operations, measurement, geometry, data analysis & probability, and algebra. Scale scores range from 0 to 500, wherein a 214 score denotes NAEP's *Basic* achievement benchmark (i.e., approximately a "grade level" performance); 249 reflects *Proficient* results or competency on challenging material, and 282 is considered to be *Advanced*.

### Wyoming and the Nation — Performance on Test Items



- ▶ Note: The position of a question on the scale represents the scale score by students who had a 65 percent probability of successfully answering a constructed response question, or a 74 percent probability of correctly answering a four-option multiple-choice question.
- ▶ *Italic* type denotes a multiple-choice question. Regular type denotes a constructed-response question. # Rounds to zero. ‡ Reporting standards not met.
- ▶ SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics

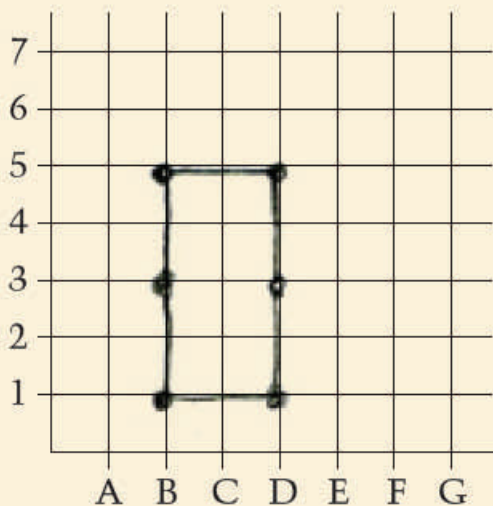
Released Test Item Snapshot

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Plot points on a grid to satisfy the conditions

SAMPLE QUESTION:

On the grid below, plot the points that have coordinates (B, 1), (B, 3), and (D, 5).



Plot 3 more points on the grid so that when you connect all 6 points you will make a rectangle.

List the coordinates for the 3 new points.

(B, 5) (D, 3) (D, 1)

Connect the 6 points to show your rectangle.

- ▶ This test item measures fourth-graders' performance in the geometry content area. It is a multistep problem that requires students to plot and identify points in the plane, and to use visualization skills to determine additional points that could be connected to form a rectangle.
- ▶ Student responses to this question were rated using five scoring levels—Extended, Satisfactory, Partial, Minimal and Incorrect
- ▶ Scoring criteria for Extended, Satisfactory, Partial, and Minimal responses are shown below:

Plot points on a grid to satisfy the conditions: Scoring guide	
<b>Extended answer</b>	Correctly plotted the three given points, (B,1), (B,3), and (D,5),  Correctly plotted three other points that formed a rectangle and gave their coordinates, and  Connected the dots to form a
<b>Satisfactory</b>	Met all of the criteria for an extended answer, but contained a minor error or omission.
<b>Partial</b>	Correctly plotted the three given points and partially plotted three other points that formed a rectangle and gave their coordinates.
<b>Minimal</b>	Plotted three points clearly (either the given points, the new points, or some combination), or partially met one of the criteria specified for an extended answer.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.

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Subtract a two-digit number from a three-digit number

This test item measures fourth-graders' performance in the number properties and operations content area. The question asks students to subtract a two-digit number from a three-digit number, which requires regrouping to obtain the correct answer of 226 (Choice A). Students were not allowed to use a calculator to answer this question

SAMPLE QUESTION:

$$\begin{array}{r} 301 \\ -75 \\ \hline \end{array}$$

- (A) 226
- (B) 235
- (C) 236
- (D) 374

A common incorrect answer (Choice C), which was selected by almost one-in-seven or 14 percent of grade 4 students in Wyoming, is a place-value error that can result from incorrect grouping in the ten's place.

	Choice A	Choice B	Choice C	Choice D	Omitted
WY	67	6	14	12	2
US	73	4	13	9	1

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 Mathematics Assessment.