A high school orders 11 buses to transport 418 students. If each bus can seat 35 students, will the number of buses ordered be enough to provide a seat for each student?

()Yes ()No

Explain your answer.

_____

_____

_____

Scoring Guide

Solution:
418 ÷ 11 = 38 per bus which is 3 more students than 35, or 3 more students would have to fit in each bus

OR

$\begin{array}{r} 38 \\ 11\overline{)418} \end{array}$ is 3 more students than can fit in a bus

OR

$\begin{array}{r} 11.9 \\ 35\overline{)418} \end{array}$ buses (must include .9)

OR

11 × 35 is less than 418

Score & Description
Correct Correct response Note: Explanation must indicate that 11 buses will only seat 385 students. This may also be illustrated by an example such as 11 × 35 = 385 OR 418 ÷ 35 = 11 with a remainder of 33 OR needs 33 more seats
Incorrect Any incorrect or incomplete response An incorrect response includes an incorrect computation

In this question the student needed to apply multiplication or division to solve a word problem, and then interpret the answer in the context of the question. To earn full credit the student needed to explain either that there were not enough seats on 11 buses for 418 students or that 418 students would require more than 11 buses.

Correct - Student Response

1 A high school orders 11 buses to transport 418 students. If each bus can seat 35 students, will the number of buses ordered be enough to provide a seat for each student?

()Yes ()No

Explain your answer.

418 divided by 35 equals 11. There will 33 students without seats so they need to order an extra bus

Incorrect - Student Response

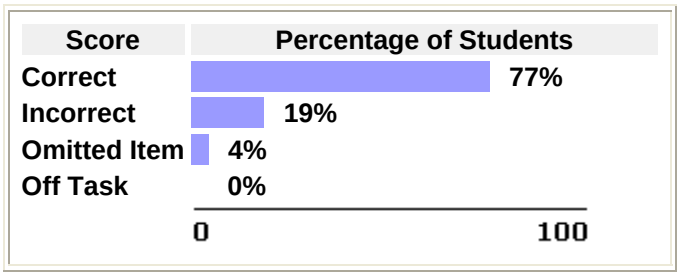
1 A high school orders 11 buses to transport 418 students. If each bus can seat 35 students, will the number of buses ordered be enough to provide a seat for each student?

()Yes ()No

Explain your answer.

Ther are less people than the total capacity of all the buses

2003 National Performance Results



Note:

- These results are for public and nonpublic school students.
- Percentages may not add to 100 due to rounding.

Mathematical Content Area: *Number sense, properties, and operations*
Mathematical Ability: *Conceptual understanding*

Mathematical Content Area

Number sense, properties, and operations

This question measures number sense, properties, and operations. This content area focuses on students' understanding of numbers (whole numbers, fractions, decimals, integers, real numbers, and complex numbers), operations, estimation, and applications to real-world situations. Students are expected to demonstrate an understanding of numerical relationships as expressed in ratios, proportions, and percents. Students are also expected to understand properties of numbers and operations, generalize from numerical patterns, and verify results. Number sense includes questions that address a student's understanding of relative size, equivalent forms of numbers, and use of numbers to represent attributes of real-world objects and quantities.

Mathematical Ability

Conceptual understanding

This question measures students' conceptual understanding. Students demonstrate conceptual understanding in mathematics when they provide evidence that they can recognize, label, and generate examples of concepts; use and interrelate models, diagrams, manipulatives, and varied representations of concepts; identify and apply principles; know and apply facts and definitions; compare, contrast, and integrate related concepts and principles; recognize, interpret, and apply the signs, symbols, and terms used to represent concepts. Conceptual understanding reflects a student's ability to reason in settings involving the careful application of concept definitions, relations, or representations of either.

	Description	Grade	Type	Difficulty
1	Solve and explain a word problem involving remainders	8th	Short Constructed Response	Hard