7th grade Task 5 Sneakers

Student Task	Determine the retail price of sneakers when given the sale price. Explain how to correctly and incorrectly calculate the retail price before the sale. Communicate why adding ten percent to a price and then subtracting ten percent from the new price does not give the original price.
Core Idea 1 Number and Operation	**Understand number systems, the meanings of operations, and ways of representing numbers, relationships, and number systems.** • Understand and use the inverse relationships of operations to solve problems • Work flexibly with fractions, decimals, and percents to solve problems • Analyze and evaluate the mathematical thinking and strategies of others • Communicate their mathematical thinking clearly and coherently

Grade 7 – 2005

Sneakers

This problem gives you the chance to:
• solve reverse percentage problems

Kate and Jane are shopping for sneakers. They see this special offer.

Kate and Jane both want to find out how much they will save.

Kate says, "20% of $44 is $8.80. That's a good saving."

Jane says, "I think the sneakers are reduced by $11."

Who is right? _____

1. Explain what each girl has done to figure out her answer and say what mistake led to the wrong answer.

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2. Explain why, if the price of something is increased by 10% and then the new price is reduced by 10%, the final price is less than the original price.

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Sneakers Grade 7		Rubric
The core elements of performance required by this task are: • solve reverse percentage problems Based on these, credit for specific aspects of performance should be assigned as follows	points	section points
1. Gives correct answer: **Jane** Gives a correct explanation including: 2) Kate was wrong because she calculated 20% of the reduced price not 20% of the original price. b) Jane saw that $44 was 80% of the original price $44 is the reduced price, which is 80% of the original price To get both explanation points, either a or b must make reference to the original price.	1 1 1	3
2. Gives a correct verbal explanation such as: 10% of a the increased price is bigger than 10% of the original price. **or** a specific example such as: $100 + 10% = $110 $110 – 10% = $99	2 or 2	2
Total Points		**5**