NWEA Assessment Item Illustrating 7.EE.B.3

Domain: Expressions and Equations

7.EE.B: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Calculator Availability: Yes

Use the information to answer the question.

A toy store is having a sale on puzzles. For each puzzle Naomi buys she gets 75% off a second puzzle. The original price of each puzzle is $16.50.

How much would 4 puzzles cost? Enter the answer in the box.

$ _____

Alignment: 7.EE.B.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Solving problems and computing fluently with rational numbers is an important part of the K–8 progression. Students can approach the solution through computation or by applying algebraic reasoning to create an expression that can be used to determine the price for four puzzles. Students may choose to model the situation using the numerical expression ((16.50)+(0.25x16.50))(2) or they may combine values to create a different, yet equivalent, expression (2)(16.50)(1.25).

Coherence: In grade 5, students become more familiar with grouping symbols within numerical expressions.[5.OA.A.1] In grade 6, students extend properties of numerical operations to properties of algebraic operations to transform and manipulate simple expressions.[6.EE.A.3] In grade 7, students use more complex linear expressions to model situations in different, but equivalent ways. Students will apply this knowledge to solve more complex linear equations,[8.EE.B.7] and extend the use of these strategies to model with mathematics in high school. [HSA-SSE.A.1]

Rigor: This item attends to conceptual understanding, procedural skill, and application. Students must connect concepts with strategy to determine an approach to solve. Students then use properties of operations with rational numbers and algebraic properties to arrive at a solution and the calculator is provided as a tool, which, if used, lessens the procedural complexity of the item. This item requires an application of mathematics in a real-world scenario where students must interpret and reason about the context in order to solve.

Answer Key:

Use the information to answer the question.

A toy store is having a sale on puzzles. For each puzzle Naomi buys she gets 75% off a second puzzle. The original price of each puzzle is $16.50.

How much would 4 puzzles cost? Enter the answer in the box.

$ 41.25

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