

NWEA Assessment Item Illustrating 7.RP.A.3

© 2020 NWEA (EXCEPT FOR COMMON CORE STATE STANDARDS © 2010 NATIONAL GOVERNORS ASSOCIATION CENTER FOR BEST PRACTICES AND COUNCIL OF CHIEF STATE SCHOOL OFFICERS). ALL RIGHTS RESERVED. USED WITH PERMISSION FROM NWEA; VISIT <https://www.nwea.org/> FOR TERMS OF USE.

Domain: Ratios and Proportional Relationships

7.RP.A: Analyze proportional relationships and use them to solve real-world and mathematical problems.

Calculator Availability: Yes

Use the information to answer the question.

Kendall bought a coat that was on sale for 20% off its original price. She paid \$76.32 for the coat, which included a 6% sales tax on the sale price of the coat.

What was the original price of the coat, not including sales tax? Enter the answer in the box.

\$

Alignment: 7.RP.A.3: Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*

Using proportional relationships to solve problems and modeling with mathematics are both foundational for future studies in mathematics and science, and both are used frequently in everyday life. In this item, students must solve a multistep word problem involving percents.

Coherence: In grade 6, students were introduced to the concept of ratios and began calculating unit rates with whole numbers. Also in grade 6, students solved problems involving unit rate, and the equivalent terms *for every*, *for each*, *for each 1*, and *per* were established and used.^{6.RP.A} In grade 7, students complete their work in ratio and proportion by using proportional relationships to solve multistep ratio and percent problems, laying the foundation for understanding relationships as functions to prepare students to graph, compare, and interpret proportional relationships as linear functions in grade 8^{8.F.A/B} and develop an understanding of slope.^{8.EE.B}

Rigor: This item attends to conceptual understanding, application, and procedural skill. Rather than simply find the percent of a whole number, students must demonstrate a more sophisticated conceptual understanding and reasoning in order to calculate the original price as specified in the item. While the context may be familiar, it requires some interpretation as the mathematics is not directly indicated in the item. The procedures for multiplying whole numbers by decimals, or operating with whole numbers, should be well-established, and the calculator is provided as a tool, which, if used, lessens the procedural complexity of the item.

Answer Key:

Use the information to answer the question.

Kendall bought a coat that was on sale for 20% off its original price. She paid \$76.32 for the coat, which included a 6% sales tax on the sale price of the coat.

What was the original price of the coat, not including sales tax? Enter the answer in the box.

\$

Learn More

Learn more with the [Math Assessment Item Alignment Professional Development Modules](#).

All content linked to within this resource was free for use when this resource was published in August 2020. Over time, the organizations that manage that external content may move or remove it or change the permissions. If the content is no longer available, please email info@studentsachieve.net.