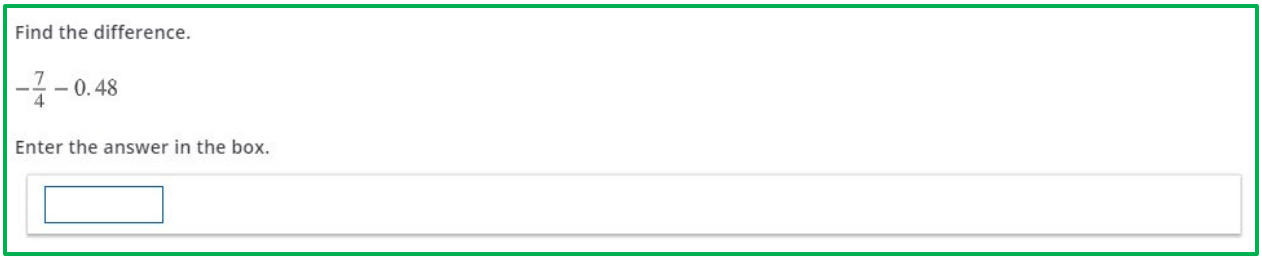
NWEA Assessment Item Illustrating 7.NS.A.1

Domain: The Number System
7.NS.A: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
Calculator Availability: No



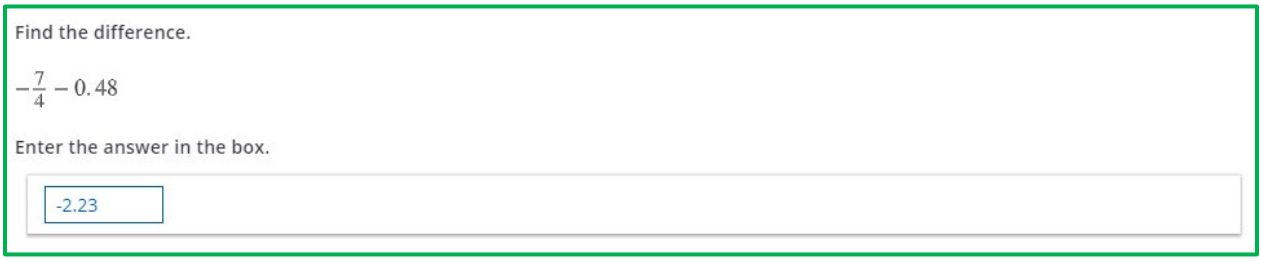
Alignment: 7.NS.A.1: Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

Operating with rational numbers is an important part of the K–8 progression. The numbers and operations in this item were chosen to illustrate the grade-level expectation for addition and subtraction with rational numbers. This item requires students to subtract a decimal number from a negative fraction. Students can use their understanding of positioning on a number line or rules for operating with signed numbers, along with converting a fraction to a decimal or a decimal to a fraction in order to carry out the computations.

Coherence: Students should be given opportunities to work toward fluency throughout instruction. Students began developing computational strategies as early as kindergarten and continue to develop strategies through grade 7. Grade 6 has the final standard in a progression of decimal number operations[6.NS.B.3] that began in grade 4.[4.NF.A.6] In grade 7, students apply and extend their understandings of using equivalent fractions as a strategy for addition and subtraction of fractions [5.NF.A] and work with the number line below zero[6.NS.C.6] to compute with negative rational numbers. Computation with rational numbers supports grade 7 work with expressions and equations,[7.EE.A/B] and prepares students for work with computing with scientific notation,[8.EE.A.4] and understanding the work with irrational numbers.[8.NS.A]

Rigor: This item attends to procedural skill. Students have developed grade-level procedures for operating with rational numbers in different forms, including signed numbers, and call upon those algorithms to compute.

Answer Key:



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