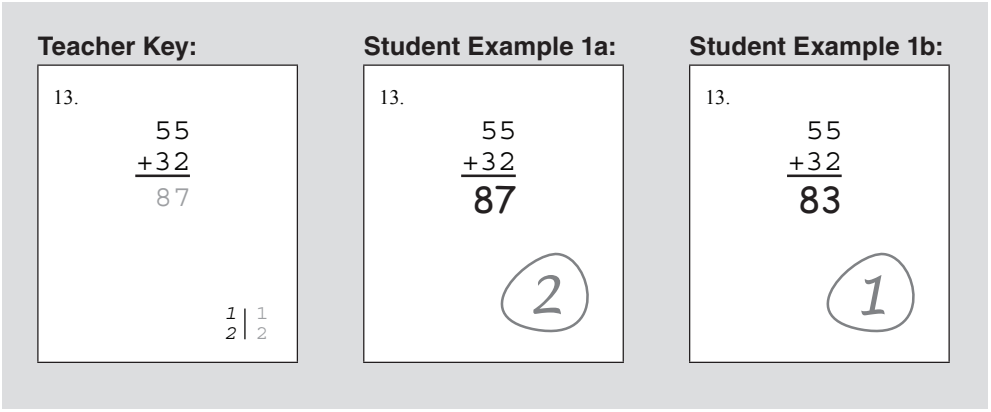
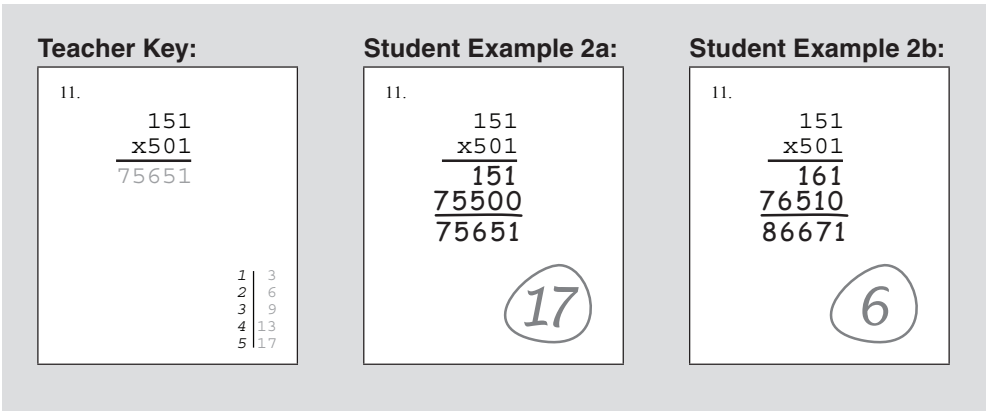
For example:



Example 1a: In this example, the student got both digits correct in the answer, and receives two points.

Example 1b: In this example, the student only got one digit correct, so receives one point.



Example 2a: In this example, the student got all five digits correct in the answer, and receives the full 17 points for the problem.

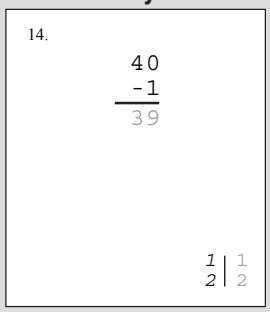
Example 2b: In this example, the student only got two digits correct (it does not matter which digits are correct), so the student receives the point total assigned to getting two digits correct, which is 6.

Additional Scoring Rules

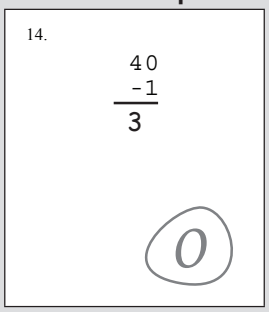
1. **Reversed (Backwards) Digits:** Credit is given for a digit written in reverse (backwards), provided that it is apparent which digit the student meant to write, that the value of the digit is correct, and that the digit is in the correct location. This rule applies only to writing a digit backwards, and not to reversing the locations of two or more digits.
2. **Digit Location:** When determining whether a digit is in the appropriate location to be considered as correct, count from the direction in which the problem is traditionally solved. For addition, subtraction, multiplication, and fractions, count from right to left. The digit location for fractions must be correct either in the numerator or the denominator. For division, count from left to right.

For example:

Teacher Key:

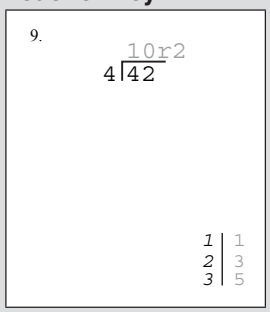


Student Example 1:

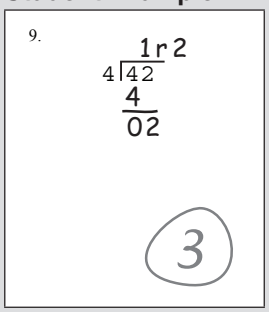


Example 1: The 3 is considered to be in the ones column rather than the tens column, since it is the first digit which appears when counting from right to left. Since there were no correct digits in the correct location, the student receives 0 points.

Teacher Key:



Student Example 2:



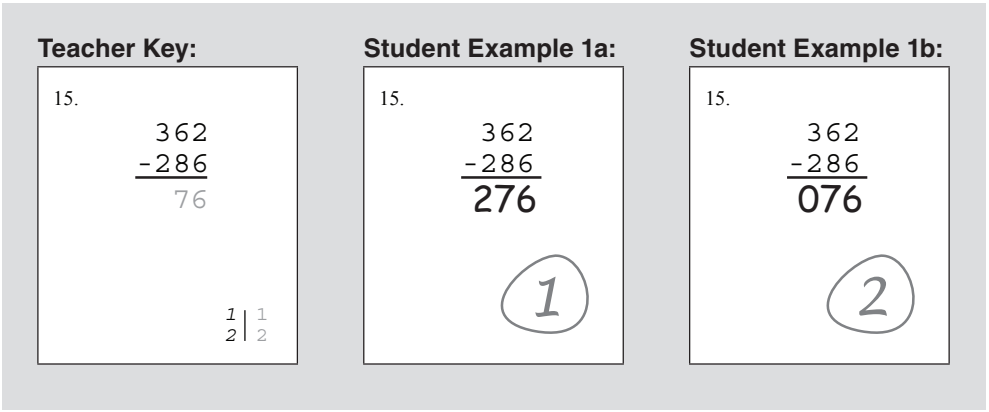
Example 2: The correct answer is 10r2, which is three digits worth five points. If the student responds with 1r2, with 1 in the quotient written above the 2 in the dividend, the 1 is considered correct since it is the first digit written from left to right, even though spatially it should have been written above the 4. The remainder of 2 is also correct, so the student got two digits correct, which is worth three points.

3. **Extra Digits and Markings:** Each point possible for a problem is linked to a correct digit in the correct location. If the student gets those digits correct, then the student earns those points. The student must have the final answer completely correct in order to receive the maximum points for the problem.

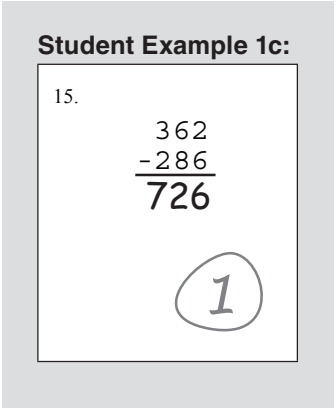
   The student does not get penalized for additional markings unless those markings change the value or location of the digits which are being scored. An extra digit in the answer is only ignored if it is a leading 0. If the extra digit is anything other than a leading 0, it is penalized since the final answer is not correct and the student would have otherwise received maximum points for the problem.

   a. For addition, subtraction, and multiplication, extra digits to the left of the answer are not counted or penalized if they are a leading 0. Any other additional digits to the left of the answer, when students would otherwise receive full credit for the correct digits, would be penalized since the final answer is not correct. The total correct digits would be reduced by 1 correct digit.

   For example:



Examples 1a & 1b: The problem 362–286 has an answer of 76, for a total of two points. If the student responds with 076, that is worth the full two points for the 76, and no points are lost for the 0 in the hundreds place. However, if the student responds with 276, the 7 and 6 are in the correct location, but the final answer is not correct due to the 2 in the hundreds place. The total correct digits for this answer would be reduced by 1 and the student would receive one point for his or her answer.

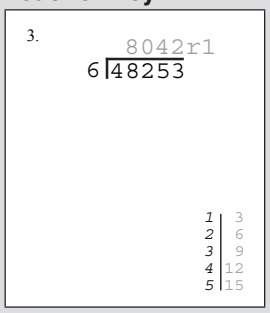


Example 1c: Same problem, but the student responds with 726. In this case, the student receives only one point, for the 6 in the ones place.

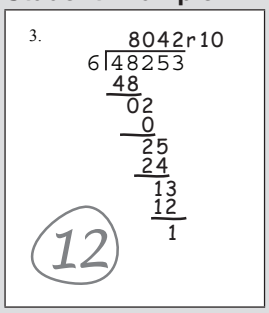
b. For division, assign correct digits by looking at the student's answer from left to right. Any other additional digits to the right of the answer or to the right of the remainder, when students would otherwise receive full credit for the correct digits, would be penalized since the final answer is not correct. The total correct digits would be reduced by 1 correct digit.

For example:

Teacher Key:

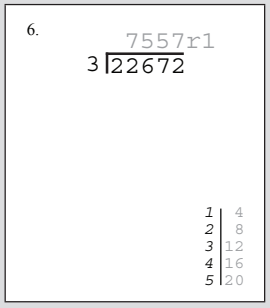


Student Example 2:

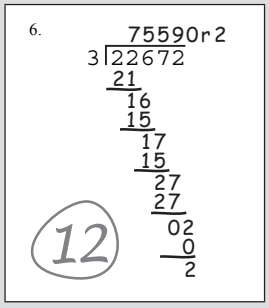


Example 2: An extra digit is added after the remainder. While the student has all of the correct digits in the correct location, the final answer is not correct due to the extra digit after the remainder. The total correct digits for this answer would be reduced by 1 and the student would receive twelve points for his or her answer.

Teacher Key:



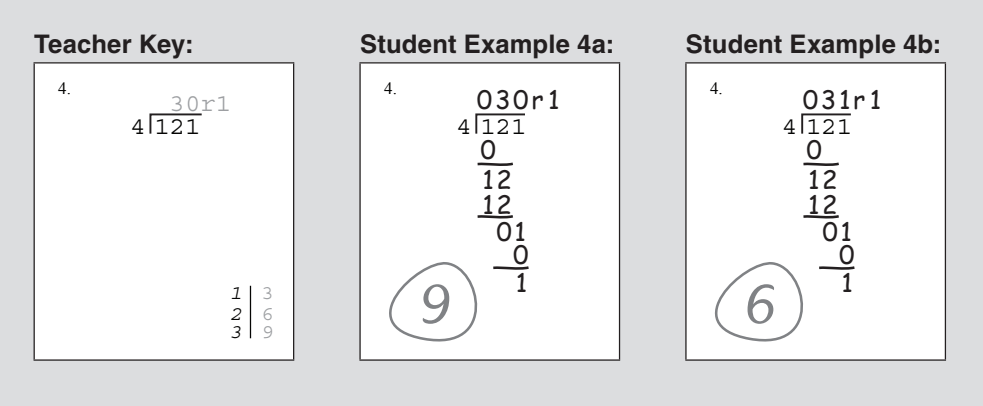
Student Example 3:



Example 3: A student solves the problem 22672/3 and gets an answer of 75590r2 (by pulling down 7 twice by accident). The student receives a score of 12, since there were three correct digits in the response.

c. For division, a leading 0 in front of the quotient should be ignored when determining which digits to compare to the answer on the scoring key.

For example:



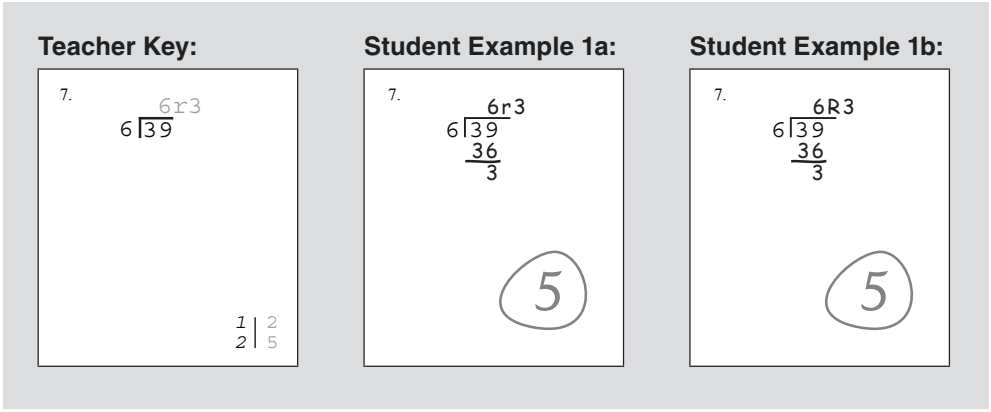
Example 4a: The student brings up a leading 0 as a placeholder. The answer is mathematically correct, so the student receives full credit.

Example 4b: The student brings up a leading 0 as a placeholder. The answer is incorrect, so you need to count the number of correct digits in order to determine the score. The leading 0 should be ignored when comparing the student's response to the scoring key, so the student got two digits correct (the 3 and the remainder) for a score of 6 points.

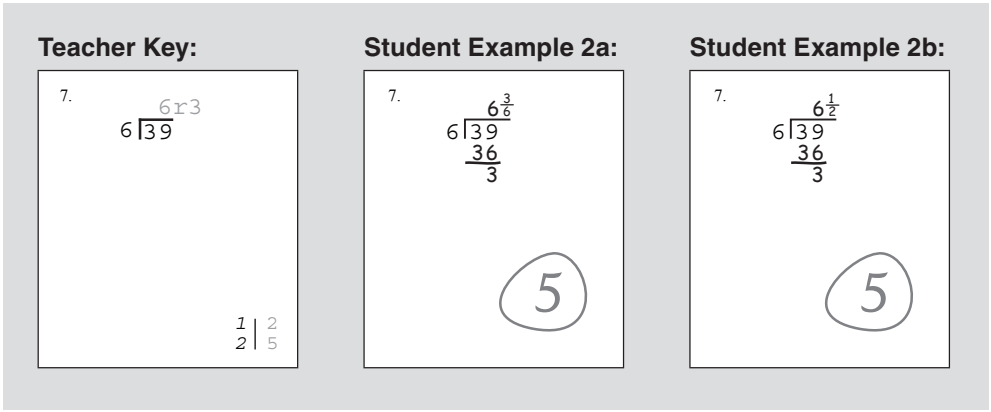
4. **Erased Digits:** Erased or partially erased digits should be counted for points if they are legible and correct.
5. **Multiplication Single-line Answers:** If a single line of work is shown for a multiplication problem, use your best judgment to determine whether that line is the first calculation of the procedure or the student's final answer, and score it according to that judgment.

6. **Remainders:** A student receives credit for a remainder whether it is written with an “r” or “R”, or written as a fraction or decimal.

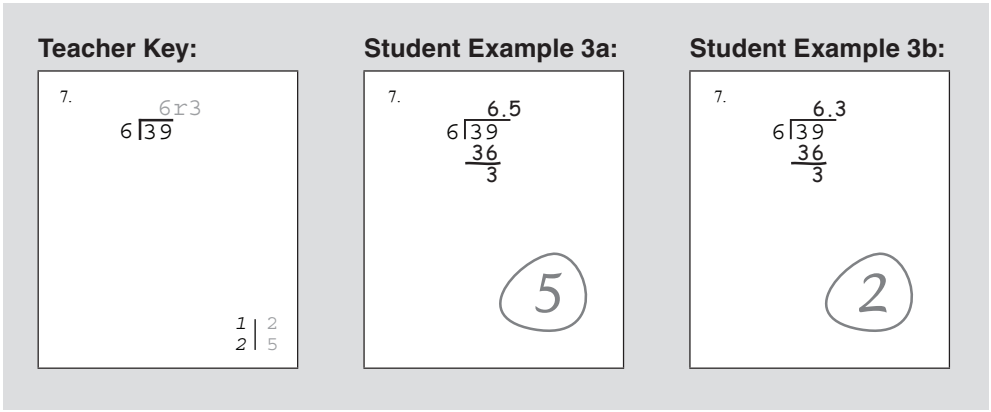
For example:



Examples 1a & 1b: The remainder can be written as “r” or “R”.



Examples 2a & 2b: When it is written as a fraction, the possible points the student can receive for that remainder are limited to the numerator (the same number of points the student would have received if it had been written with an “r” instead of a fraction).

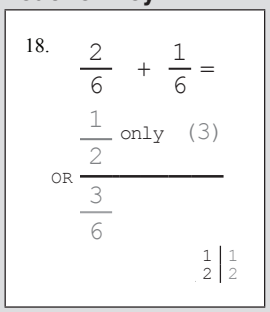


Examples 3a & 3b: If the remainder is written as a decimal, the value of the remainder after the decimal point must be equivalent to the fractional value of the remainder to be considered correct, and it is only eligible for the number of digits correct that would have normally been available for that problem (e.g., a remainder of 1/6 still only counts as 1 digit correct, even if written as .166667).

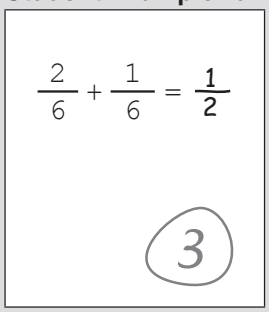
7. **Fractions:**
   a. "Only": If the Teacher Key contains multiple correct answers and the top answer has an "only" by it, then the answer has to be exact to get that number of points. This is used to award additional points if the student correctly reduced the answer. If the student's answer does not match exactly to the answer, then look at the bottom answer where differential scoring is given and determine the number of points the answer should receive.

For example:

Teacher Key:

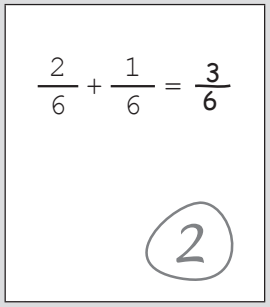


Student Example 1a:

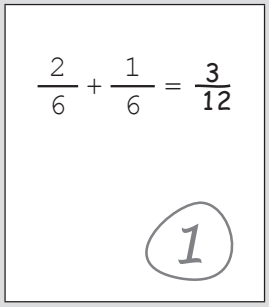


Example 1a: The student receives credit for the "only" because the student reduced the fraction correctly and it matches the "only" answer exactly.

Student Example 1b:



Student Example 1c:

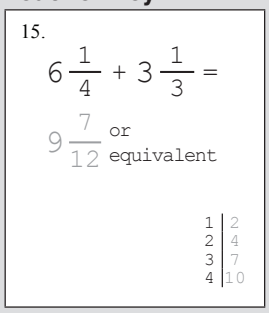


Examples 1b & 1c: Neither of the student answers match the "only" answer exactly and they are only eligible for the points in the bottom answer with the differential scoring. With example b, the student will receive full credit, 2 points, for having two digits correct. With example c, the student will only receive 1 point because only the digit in the numerator is correct.

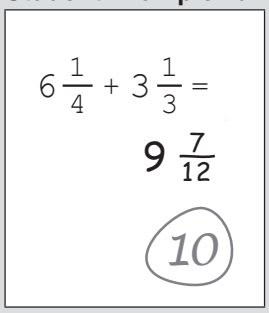
b. "Or Equivalent": A student can receive credit for a fraction problem if the student correctly uses a different denominator than the least common denominator. This can only occur if the "or equivalent" language is on the Teacher Key. Points are awarded based on correct digits, up to the maximum score on the Teacher Key.

For example:

Teacher Key:

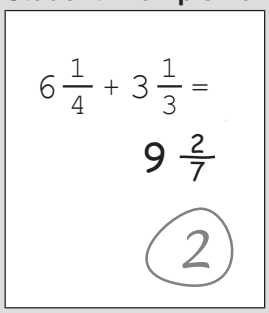


Student Example 2a:

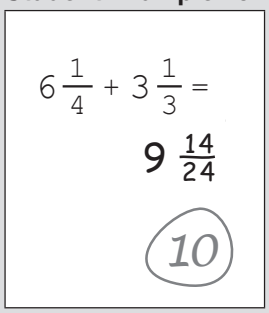


Example 2a: The student receives full credit for 4 correct digits, 10 points, in this answer.

Student Example 2b:



Student Example 2c:



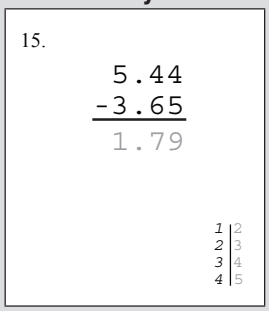
Example 2b: The student receives credit for 1 correct digit, 2 points, based on the answer. Even though a 2 and a 7 appear in the answer, they are not in the correct place and will not receive credit as correct digits.

Example 2c: The student did not pick the least common denominator for this answer, however the notation "or equivalent" is present on the Teacher Key. Since the student answered the problem correctly, he/she is eligible for the maximum number of points possible. Even though he/she has 5 correct digits, it is not possible to score above the total number of points on the Teacher Key.

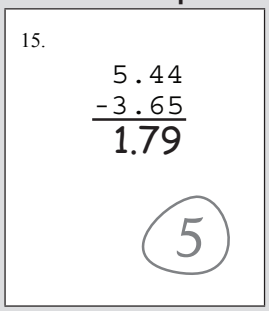
8. **Decimals:**
   a. When scoring problems with decimals, first look for the correct digits in the correct order ignoring the decimal. Look from right to the left with the addition, subtraction, and multiplication problems or left to right with the division problems. Then look to see if the decimal is in the correct place. The decimal is worth credit as a correct digit.

For example:

Teacher Key:

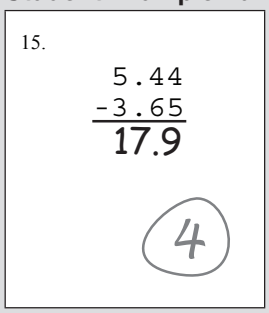


Student Example 1a:

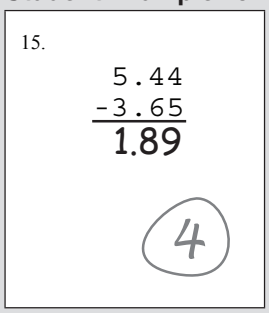


Example 1a: The student receives credit for all of the correct digits and the decimal in the correct place, a total of 4 correct digits.

Student Example 1b:



Student Example 1c:



Example 1b: With example b, the student has all of the digits correct, but the decimal is not in the correct place. The student has 3 correct digits (4 points) out of a possible 4 correct digits.

Example 1c: With example c, the student has the 9 as a correct digit, the 1 as a correct digit, and the decimal in the correct place. The student has 3 correct digits (4 points) out of a possible 4 correct digits.

Error Pattern Analysis (Optional):

The Computation materials include a single-page form for each grade, for the purpose of recording benchmark scores. In addition, those recording forms include a chart that describes the problems that appear on each worksheet. That chart can be used to analyze certain types of error patterns.

To use the chart, make the following marks. Use different color ink or another way of indicating Form A and Form B for a benchmarking time period.

1. If the student got the problem correct, circle the problem number on the chart.

2. If the student got the problem incorrect or partially incorrect, mark an X over the problem number on the chart.
3. If the student did not reach the problem or skipped the problem, leave the problem number blank.
4. If the last problem that the student attempted on the sheet was not completed, leave it blank. If the student left other problems partially done, mark an X over those numbers.

Any error patterns that cannot be tracked with the chart can still be written in as notes.

Example 1:

Benchmark 1

Problems	Skill Assessed
(1) (8) 21, 25	Add a three-digit and a two- or three-digit number, without renaming.
(7) (12) 17, 23	Add three one- or two-digit numbers, without renaming.
(4) (10) 16	Add two two-digit numbers, with renaming from ones to tens.
(3) (11) 19, 22	Add a three-digit and a two- or three-digit number, with renaming from ones to tens.
2, 13, 18	Subtract a one- or two-digit number from a two-digit number, with renaming.
6, 9, 15	Subtract a one-, two-, or three-digit number from a three-digit number, with renaming from tens to ones.
5, 14, 20, 24	Multiply a one-digit number by a one-digit number, resulting in a product of 20 or less.

Example 1: In this example, the student is correctly answering the addition problems, but is skipping the subtraction and multiplication problems.

Example 2:

Benchmark 1

Problems	Skill Assessed
(1) (8) 21, 25	Add a three-digit and a two- or three-digit number, without renaming.
(7) (12) 17, 23	Add three one- or two-digit numbers, without renaming.
(4) (10) 16	Add two two-digit numbers, with renaming from ones to tens.
(3) (11) 19, 22	Add a three-digit and a two- or three-digit number, with renaming from ones to tens.
X X 13, 18	Subtract a one- or two-digit number from a two-digit number, with renaming.
X X 9, 15	Subtract a one-, two-, or three-digit number from a three-digit number, with renaming from tens to ones.
5, 14, 20, 24	Multiply a one-digit number by a one-digit number, resulting in a product of 20 or less.

Example 2: In this example, the student is correctly answering the addition problems, but is answering each of the subtraction problems incorrectly and is skipping the multiplication problems.