Math
Released Item 2021
Grade 7

Equivalent Expressions
M25264

Prompt

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

Rubric

	M25264 Rubric
Score	**Description**
4	Response includes each of the following 4 elements: • Correctly states the step that shows the first error, Step 3 from prompt • Valid explanation for step chosen • Valid description of what the student in the prompt should have written for the chosen step, $\left(\frac{5}{6} - \frac{2}{3}\right)m + 12 - 6$ or equivalent • Valid explanation for description **Sample Student Response:** In step 3, $(\frac{5}{6})(-\frac{2}{3})m + 12 - 6$, the student combined terms incorrectly by multiplying the coefficients of m instead of subtracting. The correct expression for this step is $\left(\frac{5}{6} - \frac{2}{3}\right)m + 12 - 6$ or $\left(\frac{5}{6} - \frac{2}{3}\right)m + 6$ or an equivalent expression, which correctly represents subtraction of the like terms. Or other valid response.
3	Response includes 3 of the 4 elements.
2	Response includes 2 of the 4 elements.
1	Response includes 1 of the 4 elements.
0	Response is incorrect or irrelevant.

Anchor Set
A1 – A15
With Annotations

Anchor papers are labeled using a capital "A" followed by the sequence number (e.g., A1, A2).

Anchor papers include

- The prompt.

- The student response.

- A score in the top right corner.

The annotation follows the anchor paper, and

- Is aligned to the rubric.

- Contains parts of the student response(s) that, based on the rubric, support the scoring of each element.

- Reflects the original spelling and grammar of student response(s).

  - Example of scoring element within an annotation, with student response language (in parentheses):

    The correct fraction to represent the location of point G is given (the fracktion equeals $\frac{2}{6}$).

- May contain Scoring Decisions or clarifying notes.

The Anchor Set section is followed by a practice set with a scoring matrix. Annotations are not included in the Practice Set section.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

3rd step. In step 2 student subtracted $\frac{5}{6}$ by negative $\frac{2}{3}$ and in 3rd step he myltiplayed theso 2 fractions. I think it should be like this:

step 3: $\left(\frac{5}{6} - \frac{2}{3}\right)m + 12 - 6$

because if you put those fractions in perentasis you will subtract them and mutiplay by m and if u put parenthesis around each of them you will multiplay both of them.

Anchor Paper 1

Score Point 4
This response receives full credit. It includes each of the four required elements:

- The response includes the step that shows the first error (3rd step).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (In step 2 student subtracted . . . 3rd step he myltiplayed theso 2 fractions).

  Note: In general, a response should state that the fractions [coefficients] should have been subtracted instead of multiplied. The response needs to show understanding that the incorrect use of multiplication is the error in Step 3.

- The student response provides a correct expression for the chosen step (($\frac{5}{6}$ - $\frac{2}{3}$)m +12-6). The response shows the two fractions subtracted with the correct use of the variable m.

- The student response provides a valid explanation for the corrected expression by explaining the subtraction (if you put those fractions in perentasis you will subtract them and mutiplay by m and if u put parenthesis around each of them you will multiplay both of them). The explanation supports their expression.

  Note: For this element, the response needs to show understanding that the coefficients need to be subtracted. This can be done through a written explanation or through work supporting how their expression was obtained.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

The student made her first error going to step three. When she subtracted $\frac{5}{6}m$ and $\frac{2}{3}m$ she some how turned it into multiplication, and took out one m. she should have come out with $\frac{1}{6}m + 12 - 6$ when subtracting $\frac{5}{6}$ and $\frac{2}{3}$ you need the same denominator so you change $\frac{2}{3}$ to $\frac{4}{6}$ and $5 - 4$ is 1 so you get $\frac{1}{6}$ m.

Anchor Paper 2

Score Point 4
This response receives full credit. It includes each of the four required elements:

- The student response includes the step that shows the first error (step three).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (she some how turned it into multiplication,and took out one m).

- The student response provides a correct expression for the chosen step ($\frac{1}{6}$m + 12 - 6). The response shows the difference of the two fractions with the correct use of the variable m.

- The student response provides a valid explanation for the corrected expression by explaining the subtraction (when subtracting $\frac{5}{6}$ and $\frac{2}{3}$ you need the same denominator so you change $\frac{2}{3}$ to $\frac{4}{6}$ and 5 - 4 is 1 so you get $\frac{1}{6}$m). This response is going beyond finding the common denominator and showing the subtraction.

  Note: Only addressing the need find a common denominator is insufficient for credit. The response needs to show or explain that the coefficients need to be subtracted in the explanation for the corrected expression.

An expression is shown.

$$\frac{5}{6} m + 12 - \frac{2}{3} m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6} m + 12 - \frac{2}{3} m - 6$

Step 2: $\frac{5}{6} m - \frac{2}{3} m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right) m + 12 - 6$

Step 4: $-\frac{10}{18} m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> The student's error was on step three, where she didn't find the common denominator for $\frac{5}{6}$ and $-\left(\frac{2}{3}\right)$. Also she wasn't suppose to multiply the two fractions.
>
> My answer I recieved in this expression was $\frac{1}{6} m + 6$ because:
>
> $\frac{5}{6} m - \Box \frac{2}{3} m + 12 - 6$
>
> $\frac{5}{6} m - \frac{4}{6} m + 12 - 6$
>
> $\frac{1}{6} m + 6$

Anchor Paper 3

Score Point 4
This response receives full credit. It includes each of the four required elements:

- The student response includes the step that shows the first error (step three).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (wasn't suppose to multiply the two fractions).

- The student response provides a correct expression for the chosen step ($\frac{1}{6}$m + 6).

- The student response provides a valid explanation for the corrected expression by explaining the subtraction ($\frac{5}{6}$m - $\frac{2}{3}$m +12 - 6, $\frac{5}{6}$m - $\frac{4}{6}$m +12 - 6, $\frac{1}{6}$m + 6). The explanation for the new expression is shown through numeric support. The work shown supports their expression and uses subtraction properly.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

A student solved the equation $\frac{5}{6}$ m $+12 - \frac{2}{3}$ m -6 but made a mistake in finding the answer. In step 3 she multiplied $\frac{5}{6}$ and $\frac{2}{3}$ which she shouldn't have done because the equation never indicated for her to multiply. The correct answer is $\frac{1}{6} +6$. In the third step I subtracted instead of multiplying to find my answer in step 4.

Anchor Paper 4

Score Point 3
This response receives partial credit. It includes three of the four required elements:

- The student response includes the step that shows the first error (step 3).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (multiplied $\frac{5}{6}$ and $\frac{2}{3}$ . . . the equation never indicated for her to multiply).

- The student response provides a valid explanation for the corrected expression by explaining the subtraction (I subtracted instead of multiplying to find my answer).

The student response provides an incorrect expression by not including the variable m ($\frac{1}{6}$ + 6).

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> She made her first error on step 3. On step 2 she had $\frac{5}{6}m - \frac{2}{3}m$ which was right, but then she put them in parentheses to multiply the two fractions when she was supposed to subtract.
> The correct expression for this step is:
> $\frac{1}{6}m + 12 - 6.$

Anchor Paper 5

Score Point 3
This response receives partial credit. It includes three of the four required elements:

- The student response includes the step that shows the first error (step 3).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (she put them in parentheses to multiply the two fractions when she was supposed to subtract).

- The student response provides a correct expression for the chosen step ($\frac{1}{6}$m + 12 - 6).

The student response does not provide an explanation for the corrected expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> In step 3 the student made her first error. She did $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)$. This represents that she wants to multiply the fractions. She actually wants to subtract the two fractions. The correct expression for this step is:
> $$\left(\frac{5}{6}\right) - \left(-\frac{2}{3}\right)m + 12 - 6$$
> This expression shows that she must subtract the two fractions.

Anchor Paper 6

Score Point 3
This response receives partial credit. It includes three of the four required elements:

- The student response includes the step that shows the first error (step 3).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (She did $(\frac{5}{6})$ $(-\frac{2}{3})$. This represents that she wants to multiply the fractions. She actually wants to subtract the two fractions).

- The student response provides a valid explanation for the corrected expression by explaining the subtraction (This expression shows that she must subtract the two fractions).

The student response provides an incorrect expression by including an extra subtraction sign $((\frac{5}{6}) - (-\frac{2}{3})m + 12 - 6)$. The extra subtraction sign results in the variable m no longer being associated with $\frac{5}{6}$.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

In step 3 the student made the error bacause in step 2 it shows between the two numeber that have the m subtract but the student changed it into multiplecation. So the student got the wrong answer.

Anchor Paper 7

Score Point 2
This response receives partial credit. It includes two of the four required elements:

- The student response includes the step that shows the first error (step 3).

- The student response provides a valid explanation for the chosen step by explaining the incorrect use of multiplication (in step 2 it shows between the two numeber that have the m subtract but the student changed it into multiplecation).

The student response does not provide a correct expression for step 3.

The student response does not provide an explanation for a corrected expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> The student made her error in step 3 when she didn't simpilify the $12 - 6$. The correct answer for this step is $\frac{5}{6}m - \frac{2}{3}m + 6$. It is wrong because you must combine numbers first.

Anchor Paper 8

Score Point 2
This response receives partial credit. It includes two of the four required elements:

- The student response includes the step that shows the first error (step 3).

- The student response provides a correct expression for the chosen step ($\frac{5}{6}$m - $\frac{2}{3}$m + 6).

The student response provides an insufficient explanation for the chosen step (didn't simpilify the 12 - 6). The response does not address the incorrect use of multiplication.

The student response provides an insufficient explanation for the corrected expression (you must combine numbers first). The response does not address subtraction.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

The student made their first mistake on step two. The student used the comunitive property but forgot to change the subtraction to addition and the positive number to a negative. Step two should have been like this. $\frac{5}{6}m + \left(-\frac{2}{3}\right)m + 12 - 6$

This is the way the student should have done it becuase if you forget to do the opposite when you use the comunitive property it changes your problem.

Anchor Paper 9

Score Point 2
This response receives partial credit. It includes two of the four required elements:

- The student response includes a correct expression for the chosen step ($\frac{5}{6}$m + (-$\frac{2}{3}$)m + 12 - 6). The expression uses subtraction and appropriate use of parentheses.

- The student response provides a valid explanation for the corrected expression by explaining the subtraction (if you forget to do the opposite when you use the comunitive property it changes your problem). The response addresses changing the order but keeps all the numbers and coefficients the same. The explanation is weak but acceptable.

The student response does not state step 3 as showing the first error (step two).

The student response provides an insufficient explanation for the chosen step (used the comunitive property but forgot to change the subtraction to addition and the positive number to a negative). The response is too vague and does not address the incorrect use of multiplication.

An expression is shown.

$$\frac{5}{6} m + 12 - \frac{2}{3} m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6} m + 12 - \frac{2}{3} m - 6$

Step 2: $\frac{5}{6} m - \frac{2}{3} m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right) \left(-\frac{2}{3}\right) m + 12 - 6$

Step 4: $-\frac{10}{18} m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

step 3
she didnt add the other m
$\left(\frac{5}{6}\right) \left(-\frac{2}{3}\right) 2m + 12 - 6$
$-\frac{10}{18} 2m + 6$
$-\frac{10}{18} m + 8$

Anchor Paper 10

Score Point 1
This response receives partial credit. It includes one of the four required elements:

- The student response includes the step that shows the first error (step 3).

The student response provides an incorrect explanation for the chosen step (she didnt add the other m). The response does not address the incorrect use of multiplication.

The student response provides an incorrect expression for the chosen step $((\frac{5}{6})(-\frac{2}{3})2m + 12 - 6, -\frac{10}{18}2m + 6)$. The expression removes the coefficients from the variable m and instead incorrectly adds the m's to make 2m. It maintains the incorrect use of multiplication instead of changing it back to subtraction.

The student response does not provide an explanation for the corrected expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

Step 3.
The student did not put m after $\frac{5}{6}$ in the equation.
$\left(\frac{5}{6}\right)m\left(-\frac{2}{3}\right)m + 12 - 6$
If you use m on one, you have to use it on the other.

Anchor Paper 11

Score Point 1
This response receives partial credit. It includes one of the four required elements:

- The student response includes the step that shows the first error (step 3).

The student response provides an incorrect explanation (did not put m after $\frac{5}{6}$). The response does not address the incorrect use of multiplication.

The student response provides an incorrect expression $((\frac{5}{6})m (-\frac{2}{3})m +12-6)$. The expression maintains the incorrect use of multiplication instead of changing it back to subtraction.

The student response provides an incorrect explanation for the corrected expression (if you use m on one, you have to use it on the other). The response does not support the expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

step 3

Anchor Paper 12

Score Point 1
This response receives partial credit. It includes one of the four required elements:

- The student response includes the step that shows the first error (step 3).

The student response does not provide an explanation addressing the incorrect use of multiplication.

The student response does not provide an expression.

The student response does not provide an explanation for a corrected expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

she made her first error on step 2. she changed the first minus sign to a addition sign and the addition sign to a minus sign. she only had to change the minus sign at the end to an additilon sign.

$$\frac{5}{6}m + \frac{2}{3}m - 12 + 6$$

Anchor Paper 13

Score Point 0
This response receives no credit. It includes none of the required elements.

The student response does not include step 3 as showing the first error (step 2).

The student response provides an incorrect explanation for the chosen step (changed the first minus sign to a addition sign and the addition sign to a minus sign). The response does not address the incorrect use of multiplication.

The student response provides an incorrect expression ($\frac{5}{6}m + \frac{2}{3}m - 12 + 6$). The expression changes the incorrect use of multiplication to addition instead of subtraction, as well as incorrectly changing other signs within the expression.

The student response does not provide an explanation for a corrected expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

step 3 and step 2 you need to get rid of the 12

Anchor Paper 14

Score Point 0
This response receives no credit. It includes none of the required elements.

The student response provides both a correct and incorrect step as showing the first error (step 3 and step 2). Since step 2 is also included in the response as an incorrect step, no credit can be given for this element. Step 2 is correct.

The student response provides an incorrect explanation for the chosen step (you need to get rid of the 12). The response does not address the incorrect use of multiplication.

The student response does not provide an expression.

The student response does not provide an explanation for a corrected expression.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> The Student made her first mistake when she fliped the spots of $\frac{2}{3}m$ and the 12.

Anchor Paper 15

Score Point 0
This response receives no credit. It includes none of the required elements.

The student response does not state step 3 as showing the first error. The work implies step 2.

The student response provides an incorrect explanation for the step containing the first error (first mistake when she fliped the spots of $\frac{2}{3}$m and the 12). The response does not address the incorrect use of multiplication and the error identified is not an incorrect step.

The student response does not provide an expression.

The student response does not provide an explanation for a corrected expression.

Practice Set 1
P1-1 – P1-10
Annotations Not Included

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

the student made the error in step 3
his error was that he didnt combine like terms
correctly

$\left(\frac{5}{6} - \frac{2}{3}\right)m + 12 - 6$

step 4: $\frac{1}{6} + 6$

he was supposed to subtract them not multiply

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

The student got in wrong because she didn't subtract the right denometer because you can't subtract $\frac{5}{6} - \frac{2}{3},$ so she got to change the $\frac{2}{3}$ into $\frac{4}{6}$ so $\frac{5}{6}m - \frac{4}{6}m$ which give you $\frac{1}{6}m$. So the answer is $\frac{1}{6}m + 6$.

$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

$\frac{5}{6}m - \frac{2}{3}m = \square$

$\frac{5}{6}m - \frac{4}{6}m = \frac{1}{6}m$

$12 - 6 = 6$

$\frac{1}{6}m + 6$

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> She messed up on step 3 becase its she didn't subtract. S'o it's supposed to be $\frac{5}{6} - \frac{2}{3}$ so its $\frac{1}{4}m$ +6.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

in these steps number 2 as an error becaues he or she switched the numbers;

$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

The student made her first error in the 3rd step. She wrote $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m$ this is incorect because one $\frac{5}{6}$ doesn't have m and in the problem it is suppose to be subtraction this is multiplacation. The 3rd should look like $\frac{1}{6}m + 12 - 6$. The fourth step would be $\frac{1}{6}m + 6$. I did $\frac{5}{6} - \square \frac{2}{3}$ which equaled $\frac{1}{6}$ and $12 - 6 = 6$ and in conculsion the answer is $\frac{1}{6}m + 6$.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> in step 3 because you're suppose to subtract the fractions.
> $\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}m + 12 - 6 = 6 = \frac{1}{6}m + 6$

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

The student made her first mistake in step 3. She put $\frac{5}{6} \times \frac{-2}{3}$ when she should have subtracted them. The correct expression would be $\frac{1}{6} + 6$. You would get this answer by subtracting $\frac{5}{6} - \frac{4}{6}$ which you get from multiplying $\frac{2}{3}$ by $\frac{2}{2}$, $\frac{5}{6} - \frac{4}{6}\ \square = \frac{1}{6}$, then $12 - 6 = 6$ so $\frac{1}{6} + 6$.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

the student first error was the step 2 because she put $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$ but the real step was $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$
that's the answer because it was wrote like that in first place.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

Student made her first error in step 3 because she multiplied instead of subtracting.
Step #3:
$\frac{1}{6}$m+6
see I subtracted $\frac{5}{6}$ and $\frac{2}{3}$ instead of multiplying them.

An expression is shown.

$$\frac{5}{6}m + 12 - \frac{2}{3}m - 6$$

A student wrote the steps she used to determine an expression equivalent to the expression shown.

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

- In which step did the student make her first error?
- Explain your response.
- Write the correct expression for this step.
- Explain your response.

Enter your answers and your explanations in the space provided.

> her first mistake was when she put the ($\square$) outside of the fractions she but the m in the wrong spot so she got the m in the wrong spot

Practice Set Paper	Score
P1-1	4
P1-2	2
P1-3	1
P1-4	0
P1-5	4
P1-6	3
P1-7	3
P1-8	0
P1-9	4
P1-10	0