Kendall’s class was collecting data about plant growth. They measured their class plant once each week and recorded the change in height on their growth chart.

<table>
<thead>
<tr>
<th>Week</th>
<th>Growth (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( \frac{5}{6} )</td>
</tr>
<tr>
<td>2</td>
<td>( \frac{1}{2} )</td>
</tr>
<tr>
<td>3</td>
<td>( \frac{3}{4} )</td>
</tr>
<tr>
<td>4</td>
<td>( \frac{1}{3} )</td>
</tr>
<tr>
<td>5</td>
<td>( \frac{2}{3} )</td>
</tr>
</tbody>
</table>

**Part A**

Kendall’s teacher asked the class to determine how many inches the plant grew in week 2 and week 4. Kendall wrote an equation to show her work.

\[
\frac{1}{2} + \frac{1}{3} = \frac{2}{5}
\]

Is Kendall’s answer reasonable? Use the benchmark fraction \( \frac{1}{2} \) to explain your thinking.

**Part B**

Kendall’s teacher also asked the class to determine the plant’s total growth, in inches, over the 5 weeks.

What steps should Kendall take to solve this problem?

**Part C**

How much did the plant grow in five weeks? Show your work and write your answer in as a mixed number.
**Part A**

Kendall’s answer is not reasonable because $\frac{2}{5}$ is less than $\frac{1}{2}$.

Explanations could include, but are not limited to:

- Kendall’s answer can’t be right. When you add the sum should be larger than the addends. Adding $\frac{1}{3} + \frac{1}{2}$ should create a number larger than $\frac{1}{2}$ but $\frac{2}{5}$ is less than $\frac{1}{2}$.
- Kendall added incorrectly. $\frac{1}{3}$ is less than $\frac{1}{2}$ but when you add them together the answer should be larger than $\frac{1}{2}$, but Kendall’s answer is smaller. $\frac{2}{5} = \frac{4}{10}$ and $\frac{1}{2} = \frac{5}{10}$ and $\frac{4}{10} < \frac{5}{10}$. Her answer should have been larger than that.

**AND**

**Part B**

Descriptions could include, but are not limited to:

- Kendall needs to find the multiple that all the denominators have in common. For 2, 3, 4, and 6 this would be 12. Then she has to change all the fractions to have the same denominator. She would do this by multiplying each fraction by a fraction equivalent to one: $\frac{6}{6}$, $\frac{4}{4}$, $\frac{3}{3}$, and $\frac{2}{2}$.
- Kendall needs to find the lowest common multiple. She can do this by skip counting by each number and finding the first multiple they all have in common. Then she will need to multiply the original fractions by the appropriate number to change them all to have the same denominator.

**AND**

**Part C**

The plant grew a total of $3 \frac{1}{12}$ inches over a five-week period.

Work shown could include, but is not limited to:

- Drawn fraction models
- Singapore boxes
- Equations

To create common denominators:

$\frac{5}{6} \times \frac{2}{2} = \frac{10}{12}$ and $\frac{1}{2} \times \frac{6}{6} = \frac{6}{12}$ and $\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$ and $\frac{1}{3} \times \frac{4}{4} = \frac{4}{12}$ and $\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$

To find the total growth:
\[
\frac{10}{12} + \frac{6}{12} + \frac{9}{12} + \frac{4}{12} + \frac{8}{12} = \frac{37}{12} = 3 \frac{1}{12}
\]

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Rubric</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Response</strong></td>
<td>demonstrates limited to no understanding of the standard.</td>
<td>demonstrates partial understanding of the standard.</td>
<td>demonstrates sufficient understanding of the standard.</td>
<td>demonstrates a complete understanding of the standard.</td>
</tr>
<tr>
<td>Student earns 0 points for not meeting any of the requirements for score point 1.</td>
<td>Student earns 1 point for 1 part correct and complete.</td>
<td>Student earns 2 points for 2 parts correct and complete.</td>
<td>Student earns 3 points for 2 parts correct and complete AND 1 part with either a correct answer or a correct explanation shown.</td>
<td>Student earns 4 points for the student identifying all parts completely and correctly.</td>
</tr>
</tbody>
</table>