NAME_____

Module 6 **Computational Fluency of Fractions**
Lesson 1 **Adding and Subtracting Fractions with Like Denominators**

Challenge Problems 6.1

Set 1

1. Glen added $\frac{1}{8}+\frac{3}{8}$ and said that the answer was $\frac{4}{16}$, or $\frac{1}{4}$. Find and explain Glen's error.

2. When is the sum of two fractions with like denominators equal to one? Make an example.

Set 2

Evaluate.

1. $\frac{7}{8}+\frac{2}{8}-\frac{1}{8}$

2. For what value of n is the expression $\frac{11}{12}-\frac{n}{12}$ equal to $\frac{1}{2}$? Explain how you know.

Possible Answers

Set 1

1. Glen added the numerators and the denominators. If there were a common denominator, the denominator would not change value in the sum; it would simply be carried over to the denominator of the sum.

Correct answer: $\frac{1}{8}+\frac{3}{8}=\frac{1+3}{8}=\frac{4}{8}=\frac{1}{2}$

2. The sum of two fractions with like denominators equals one when the sum of the numerators of the addends equals the like or common denominator.

Example: $\frac{5}{6}+\frac{1}{6}=\frac{6}{6}=1$

Set 2

1.
$$\frac{7}{8}+\frac{2}{8}-\frac{1}{8}=\frac{7+2}{8}-\frac{1}{8}$$
$$=\frac{9}{8}-\frac{1}{8}$$
$$=\frac{9-1}{8}$$
$$=\frac{8}{8}$$
$$=1$$

2. First, I found the equivalent of one-half in terms of twelfths: $\frac{1}{2}=\frac{6}{12}$. Then, I wrote the problem with common denominators. Because the difference of the numerators was the numerator of the answer, I determined which number to subtract from 11 to get six. That number was five.

$$\frac{11}{12}-\frac{n}{12}=\frac{6}{12}$$

Solve $11 - n = 6$.

$n = 5$