LESSON 8·13	**Open Response**	Progress Check 8 ✓

Writing Egyptian Fractions

A fifth grade class was doing research about fractions. They've found that the ancient Egyptians wrote all of their fractions as a sum of unit fractions where **no unit fraction is repeated.**

For example, you cannot write $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$. One way to write it would be: $\frac{1}{2} + \frac{1}{4}$.

An algorithm for finding a unit fraction expression for any fraction is the Greedy Method. To use the Greedy Method on fraction X:

Start with the largest unit fraction less than fraction X. Then continue in the same manner to represent the remaining value.

Example: Represent $\frac{7}{8}$ as a sum of unit fractions.

Step 1: $\frac{7}{8} = \frac{1}{2} + \frac{3}{8}$ $\frac{1}{2}$ is the largest unit fraction $< \frac{7}{8}$

Step 2: $\frac{7}{8} = \frac{1}{2} + \frac{1}{4} + \frac{1}{8}$ $\frac{1}{4}$ is the largest unit fraction $< \frac{3}{8}$

1. Represent $\frac{9}{10}$ as a sum of unit fractions. Show all of your work. Explain your thinking.

2. Represent $\frac{9}{10}$ as a sum of unit fractions in a different way. Show all of your steps.