3.11 Egyptian Fractions

Chapter 3: Factors, Multiples, and Fractions

Name: _____ Date: _____ Class/Period: _____

Problem 3.154 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{3}{4}$

Problem 3.155 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{2}{3}$

Problem 3.156 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{5}{8}$

Problem 3.157 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{7}{10}$

Problem 3.158 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{4}{9}$

Problem 3.159 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{5}{12}$

Problem 3.160 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{11}{12}$

Problem 3.161 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{7}{8}$

Problem 3.162 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{5}{9}$

Problem 3.163 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

$\frac{7}{12}$

Problem 3.164 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

[borderline south=.65pt0ptblack] $\frac{3}{5}$

Problem 3.165 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

[borderline south=.65pt0ptblack] $\frac{4}{7}$

Problem 3.166 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

Verify that

$$\frac{5}{7} = \frac{1}{2} + \frac{1}{5} + \frac{1}{70}.$$

Problem 3.167 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

Determine whether

$$\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$$

is an Egyptian-fraction representation. Explain.

Problem 3.168 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

Find n:

$$\frac{3}{4} = \frac{1}{2} + \frac{1}{n}.$$

Problem 3.169 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

Find n:

$$\frac{5}{6} = \frac{1}{2} + \frac{1}{4} + \frac{1}{n}.$$

Problem 3.170 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

[borderline south=.65pt0ptblack] Find a three-term Egyptian-fraction representation of $\frac{3}{4}$ that is different from

$$\frac{1}{2} + \frac{1}{4}.$$

Problem 3.171 Directions:
Write each fraction as a sum of distinct unit fractions. More than one answer may be possible.

[borderline south=.65pt0ptblack] A student claims that

$$\frac{7}{8} = \frac{1}{2} + \frac{1}{3} + \frac{1}{24}.$$

Verify or correct the claim.