Day 2 Extension

Let's investigate

3 a List the fractions less than 1 that have a denominator of 6. Reduce each one to its simplest equivalent fraction.

b How many reduce to a denominator that is not 6?

c How many still have a denominator of 6?

4 a Investigate the sets of fractions with denominators 4, 5, 7, 8, 9, 10, ...

b What is special about the denominators in the sets that have no fractions that can be reduced?

Day 2 Extension Answers

4 a $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}$

3 in the set

Reduced to: $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$

1 has a denominator not 4

2 have a denominator still 4

$\frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}$

4 in the set

None can be reduced.

All have a denominator still 5

$\frac{1}{7}, \frac{2}{7}, \frac{3}{7}, \frac{4}{7}, \frac{5}{7}, \frac{6}{7}$

6 in the set

None can be reduced.

All have a denominator still 7

$\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}, \frac{6}{8}, \frac{7}{8}$

7 in the set

Reduced to: $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}$

3 have a denominator not 8

4 have a denominator still 8

$\frac{1}{9}, \frac{2}{9}, \frac{3}{9}, \frac{4}{9}, \frac{5}{9}, \frac{6}{9}, \frac{7}{9}, \frac{8}{9}$

8 in the set

Reduced to: $\frac{1}{9}, \frac{2}{9}, \frac{1}{3}, \frac{4}{9}, \frac{5}{9}, \frac{2}{3}, \frac{7}{9}, \frac{8}{9}$

2 have a denominator not 9

6 have a denominator still 9

$\frac{1}{10}, \frac{2}{10}, \frac{3}{10}, \frac{4}{10}, \frac{5}{10}, \frac{6}{10}, \frac{7}{10}, \frac{8}{10}, \frac{9}{10}$

9 in the set

Reduced to: $\frac{1}{10}, \frac{1}{5}, \frac{3}{10}, \frac{2}{5}, \frac{1}{2}, \frac{3}{5}, \frac{7}{10}, \frac{4}{5}, \frac{9}{10}$

5 have a denominator not 10

4 have a denominator still 10

b The sets that have no fractions that can be reduced have denominators that are prime numbers.