


Convert between terminating decimals and fractions
#4

- Some of these conversions are standard facts: $0.5 = \frac{1}{2}$, $0.1 = \frac{1}{10}$, $0.2 = \frac{1}{5}$, $0.25 = \frac{1}{4}$, and $0.125 = \frac{1}{8}$.
- Families of standard facts are created by scaling up; so $0.4 = \frac{2}{5}$, $0.6 = \frac{3}{5}$, $0.8 = \frac{4}{5}$, $0.75 = \frac{3}{4}$, $0.375 = \frac{3}{8}$, $0.625 = \frac{5}{8}$, $0.875 = \frac{7}{8}$, $0.3 = \frac{3}{10}$ and so on.
- Other conversions are based on knowing place value headings and finding equivalent fractions




<p>Example 1</p> <p>Write 0.37 as a fraction.</p> $0.37 = \frac{37}{100}$ <p>HINT: the last place value column is hundredths</p>	<p>Example 2</p> <p>You may need to simplify</p> <p>Write 0.115 as a fraction.</p> $0.115 = \frac{115}{1000} = \frac{23}{200}$ <p>thousandths</p>	<p>Watch out!</p> <p>When simplifying a fraction, remember that common factors can be anything – not just 2!</p> <p>Please don't write something like $\frac{2}{5} = 2.5$. It just can't be true! $\frac{2}{5}$ is less than 1, and 2.5 is greater than 1.</p> <p>Check the place value heading for the last column: $\frac{7}{100} \neq 0.7$</p> 
<p>Example 3</p> <p>Write $\frac{13}{25}$ as a decimal.</p> $\frac{13}{25} = \frac{52}{100} = 0.52$ <p>HINT: scaling up – more reversing</p>	<p>Example 4</p> <p>Write $\frac{3}{40}$ as a decimal.</p> $\frac{3}{40} = \frac{75}{1000} = 0.075$	

Historical note

The horizontal fraction bar was introduced by the Muslim mathematician Abu Bakr al-Hassar in the 12th century. Students should use a horizontal fraction bar to avoid confusion when used with algebra.

Assessment task

 8M4 'Build-a-Mathematician'