Year 8 | Number

Terminating and recurring decimals

Learn and practise | Free preview

A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Convert between fractions and terminating or recurring decimals.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

Long division converts fractions into decimals. A repeating remainder produces recurring digits. After simplification, a denominator with only factors 2 and 5 produces a terminating decimal.

To convert a simple recurring decimal, set x equal to it, multiply by a suitable power of 10, and subtract to remove the repeating tail.

Worked example

Convert 0.444… to a fraction.

Let $x=0.444\ldots$; then $10x=4.444\ldots$.

Subtract:$9x=4$, so $x=4/9$.

Answer: 4/9

Try it yourself

Name: _____ Date: _____

1. Convert 3/8 to a decimal.

2. Convert 0.28 to a simplest fraction.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. 0.375

Divide 3 by 8.

2. 7/25

28/100 simplifies by 4.

Curriculum reference: VC2M8N03

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