Year 8 | Number

Irrational numbers and approximations

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

• Distinguish rational numbers from irrational numbers in measurements.

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

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

A rational number is a ratio of integers with a non-zero denominator. Its decimal terminates or repeats. An irrational number has a non-terminating, non-repeating decimal.

π and square roots of non-square positive integers are irrational. A calculator display is a finite approximation, not the full exact value.

Worked example

Classify $\sqrt{49}$ and $\sqrt{50}$.

$\sqrt{49}=7$, an integer and rational number.

50 is not a perfect square, so $\sqrt{50}$ is irrational.

Answer: $\sqrt{49}$ rational; $\sqrt{50}$ irrational

Try it yourself

Name: _____ Date: _____

1. Classify 0.125 as rational or irrational.

2. Classify √13.

Answers and explanations

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

1. Rational

It equals 1/8.

2. Irrational

13 is not a perfect square integer.

Curriculum reference: VC2M8N01

Independent original resource. Not published or endorsed by VCAA. This focused set supports the listed skills; it is not a complete course or an official assessment.

This free preview may be shared intact with attribution. Not for sale.