Real numbers and exact values

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

• Work with rational and irrational numbers while distinguishing exact and approximate results.

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

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

The real number system contains rational and irrational numbers. An exact expression such as $\sqrt{5}$ or 3π retains full precision; a rounded decimal is an approximation.

Choose representations that suit the calculation. When comparing quantities, locate them on a number line or use sufficiently accurate approximations without claiming equality.

Worked example

Find the exact area of a circle of diameter 7 cm.

Radius$=7/2$ cm.

$A=\pi(7/2)^2$.

Answer: $49\pi/4$ cm^2

Try it yourself

Name: _____ Date: _____

1. Classify -3/8, √16 and √17.

2. Order √2,1.5 and 7/5.

Answers and explanations

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

1. Rational, rational, irrational

$\sqrt{16}=4$; 17 is not a perfect square.

2. $\frac{7}{5}$, $\sqrt{2}$, 1.5

$1.4<1.414\ldots<1.5$.

Curriculum reference: VC2M9N01

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