

Divide and conquer

Teacher notes

Why use this resource?

This problem gets students to use and approximate surds without a calculator, helping to give them a better feel for what value an expression involving surds represents. It encourages them to be creative with their approach and may lead to rich discussions about methods, accuracy and estimation. It can also provide motivation for rationalising the denominator.

Possible approach

This problem is ideal for a think, pair, share approach, giving students an opportunity to come up with their own ideas, before discussing and comparing different methods.

Key questions

- How many different ways can you approximate the value of $1 \div \sqrt{2}$?
- Which approach involved the simplest calculations?
- How are $1 \div \sqrt{2}$ and $\sqrt{50} \div 10$ related?

Possible support

Encourage students to approximate the value of $\sqrt{2}$ for themselves. Asking them what $\sqrt{1}$ and $\sqrt{4}$ are, may help them start their estimation.