Near miss

Teacher notes

Why use this resource?

Students are invited to consider why two very similar pairs of simultaneous linear equations have such a startling difference between the solutions. Thinking graphically as well as algebraically will be helpful here. Although the numbers look horrid, with a bit of thinking, solving is straight forward without recourse to a calculator for both pairs. It can help students understand the importance of using sufficient precision in calculations (and hence why in other circumstances it is best to manipulate irrationals and surds rather than introducing rounding errors).

Possible approach

Tell students to put away calculators! Try giving students 5 minutes to think about this and possibly attempt to solve these. They may like to work on mini-whiteboards, as numbers look messy. Then students could work in pairs or small groups.

Key questions

- What techniques can we use for solving simultaneous equations?
- What can we do easily without a calculator?
- What can you say about the pairs of equations? Can you visualise what is happening in graphs of the two cases?
- What does this tell us about rounding answers in maths?

Possible support

Ask students if they notice anything if they add the fist pair of equations. What about if they subtract them? How can they use this?

Possible extension

Can they write a similar pair of pairs which differ by even more?