Simultaneous linear equations

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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

• Find intersections using substitution, elimination and graphs.

• 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 simultaneous solution satisfies both equations. On a graph it is an intersection point. Substitution replaces one variable; elimination combines equations to remove one variable.

Parallel distinct lines have no common solution. Equivalent equations describe the same line and have infinitely many solutions.

Worked example

Solve x+y=11 and x-y=3.

Add equations:2x=14, sox=7.

Then y=4; check both.

Answer: (x, y)=(7,4)

Try it yourself

Name: _____ Date: _____

1. Solve x+y=9 and x-y=1.

2. Solve y=2x and x+y=12.

Answers and explanations

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

1. x=5, y=4

Add to get 2x=10.

2. x=4, y=8

Substitute to get 3x=12.

Curriculum reference: VC2M10A09

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