Parallel and perpendicular lines

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

• Use gradients to classify and construct lines.

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

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

Non-vertical parallel lines have equal gradients. For two non-vertical perpendicular lines, the gradients multiply to -1.

A horizontal line and a vertical line are perpendicular; the negative-reciprocal rule needs this special case because a vertical gradient is undefined.

Worked example

Find a line perpendicular to y=2x+3 through (0,5).

Perpendicular slope is -1/2.

The point gives y-intercept 5.

Answer: y=-x/2+5

Try it yourself

Name: _____ Date: _____

1. Find gradient of a line parallel to y=-3x+7.

2. Find perpendicular gradient to 4.

Answers and explanations

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

1. -3

Parallel slopes agree.

2. -1/4

Take negative reciprocal.

Curriculum reference: VC2M10A10

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