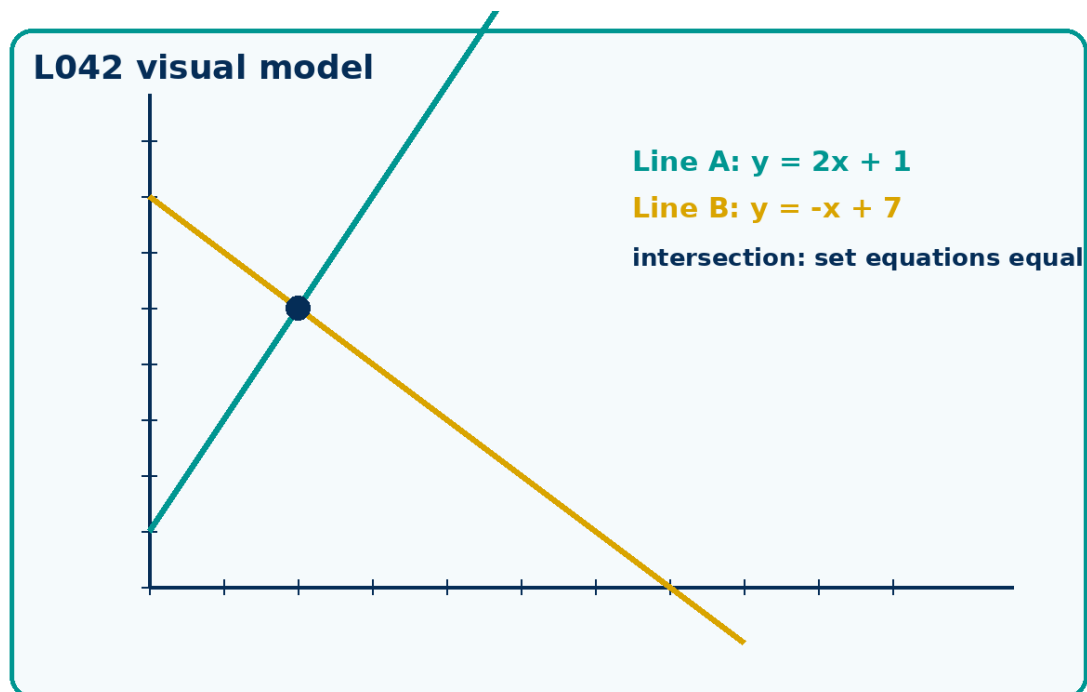


Learner workbook: Straight line equations

Objective: Form and use straight-line equations, check whether points lie on a line and locate intersections.

Calculator condition: Non-calculator core. Calculator optional for checking plotted intersections only.



Connect & Check

- Retrieve gradient and intercept from $y = 2x + 1$ and $y = -x + 4$.
- Predict where two lines might meet before calculating.

Choose your route

A - Visual Sketch, annotate or use the diagram.	B - Method Use a table, calculation chain or formula.	C - Explain Write sentences explaining why the method works.
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Share

- Compare table, graph and equation routes.
- Explain why equal gradients create parallel lines when intercepts differ.

Present: modelled method

- Use $y = mx + c$. Substitute a point to test it.
- For intersections, set the two y-values equal, solve for x, then find y.

Apply: supported to independent practice

Equation: Find the equation of a line with gradient 2 and intercept -3.

Working: _____

Check: _____

Point check: Does (4,5) lie on $y = 2x - 3$?

Working: _____

Check: _____

Parallel: Are $y = 4x + 1$ and $y = 4x - 6$ parallel? Explain.

Working: _____

Check: _____

Stretch and deep challenge

- Stretch: Find the equation of the line through (2, -1) and (6, 7).
- Deep challenge: The lines $y = 3x - 4$ and $6x - 2y = 8$ are claimed to intersect. Test the claim.

Recall & Review

- Check a point against a fresh line equation.
- Decide if two lines intersect, are parallel or are the same line.

WWW: _____ EBI: _____

Recall & Review: feedback and extension integration

Lesson L042: Straight line equations

Objective: Form and use straight-line equations and locate intersections.

Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain one check, correct one error and record the next practice step.

What Went Well (WWW)

I represented the algebraic structure accurately, kept each transformation valid and checked the result by substitution, graph or equivalent reasoning.

Even Better If (EBI)

I will show the missing inverse operation or algebraic step, keep signs and brackets accurate and test the result in the original relationship.

Integrated stretch and deep challenge

Stretch: Find the equation of the line through $(2, -1)$ and $(6, 7)$.

Deep challenge: The lines $y=3x-4$ and $6x-2y=8$ are claimed to intersect. Test the claim.

My next-step response
