Guide to:
Sim. equ. graphically

maths Links

Explanation:

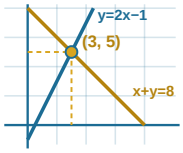
To solve simultaneous equations graphically, plot both equations on the same set of axes and find the **coordinates (x, y) of the point(s) where the graphs intersect**. At an intersection point, both equations share the exact same x-value and y-value.

Two non-parallel straight lines cross at **one point** (one pair of solutions). A straight line and a quadratic curve can cross **twice** (two pairs of solutions), touch **once** as a tangent, or never meet (no real solutions).

Example 1: The lines **y = 2x − 1** and **x + y = 8** are drawn on a grid and cross at **(3, 5)**. Write down the solution to the simultaneous equations.

Solution:

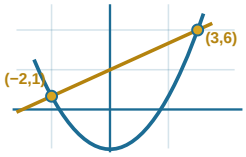
Read intersection coordinates:
x = **3**, y = **5**
Check: 2(3)−1 = 5; 3+5 = 8 ✓
Answer: x = 3, y = 5



Example 2: The curve **$y = x^2 - 3$** and the line **y = x + 3** intersect at **(−2, 1)** and **(3, 6)**. Solve the simultaneous equations graphically.

Solution:

Read both intersections:
• (−2, 1) → **x = −2, y = 1**
• (3, 6) → **x = 3, y = 6**
Ans: (−2, 1) or (3, 6)



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Corbettmaths (Textbook)	Qs	Ans	**PMT (Edexcel)**	Qs	Ans
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