

LCOL Algebra 20 — Linear Simultaneous Equations

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ON THE LCOL PAST PAPERS · Examined in 6 question-parts, 2016–2025 (main sittings) | 2025: P1 Q5(a) · 2023: P1 Q3(c) · 2022: P1 Q2(c) · 2021: P1 Q9(b)(ii) · 2018: P1 Q3(b) · 2016: P1 Q3(b)

How to use this sheet: these are the exact questions worked in this tutorial, in order. Try each one yourself first — the time it is posed in the video is shown, so you can pause before Paul solves it. Final answers are at the back; the full method is in the video.

Worked examples (in the video)

Example 1. Solve $3x + 4y = 5$ and $x - 3y = -7$ (multiply the second by -3 to cancel the x 's). (worked 00:50–06:51).

Example 2. Solve $2x + y = -5$ and $2x - 2y = -2$, then verify. (worked 06:51–11:38).

Example 3. Solve $-3x + 4y = 14$ and $4x - 5y = -17$ (multiply BOTH equations to match $12x$). (worked 11:38–17:22).

Questions

Part 1. Solve and verify: $3x + 2y = -1$ and $4x - 2y = -13$.

Posed at 17:22 in the tutorial.

Part 2. Solve and verify: $3x + 4y = 5$ and $7x - 5y = 26$.

Posed at 20:23 in the tutorial.

Part 3. Solve and verify: $12x - 7y = 84$ and $2x + 3y = 14$.

Posed at 25:42 in the tutorial.

Answers

Final answers only — pause the video and check yourself; the worked method is in the tutorial.

Example 1. $y = 2$, $x = -1$

Example 2. $x = -2$, $y = -1$ (verify: $2(-2) - 2(-1) = -2$ ✓)

Example 3. $y = 5$, $x = 2$

Part 1. $x = -2$, $y = \frac{5}{2}$ (a fraction is fine)

Part 2. $x = 3$, $y = -1$

Part 3. $y = 0$ (zero is fine), $x = 7$

Overlaps with these tutorials

LCOL Algebra 21 — Simultaneous Equations by Substitution. A second method for these — and the one you need when one equation has a square. Comes next.

LCOL Algebra 5 — Introduction to Equations. The single-equation solve you finish with once a letter cancels.