SIMULTANEOUS EQUATIONS (GRAPHICALLY)

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. $y = 2x + 1$ and $y = -x + 4$ | $x = 1, y = 3$

2. $y = 3x - 2$ and $y = x + 2$ | $x = 2, y = 4$

3. $y = -2x + 3$ and $y = x - 1$ | $x = 1.33, y = 0.33$

4. $y = 4x - 1$ and $y = -x + 4$ | $x = 1, y = 3$

5. $y = -3x + 2$ and $y = 2x - 3$ | $x = 1, y = -1$

6. $y = x + 3$ and $y = -2x + 1$ | $x = -0.67, y = 2.33$

7. $y = 5x - 4$ and $y = -2x + 3$ | $x = 1, y = 1$

8. $y = -4x + 5$ and $y = 3x - 2$ | $x = 1, y = 1$

9. $y = 2x - 5$ and $y = -3x + 5$ | $x = 2, y = -1$

10. $y = x - 4$ and $y = -x + 2$ | $x = 3, y = -1$

MASTER QUESTIONS

M1. Two lines intersect at point (2,3). One has gradient 2, the other has gradient -1. Find their equations. | $y = 2x - 1$ and $y = -x + 5$

M2. A triangle's vertices are at (0,0), (4,0), and the intersection of $y = x + 1$ and $y = -2x + 7$. Find the area.

Area = 6 square units

M3. The sum of two numbers is 8 and their difference is 2. Represent this as simultaneous equations and solve.

$x + y = 8$ and $x - y = 2$, solution: $x = 5$, $y = 3$

M4. A shop sells pens for £2 and pencils for £1. A customer buys 5 items and pays £8. How many of each did they buy?

3 pens and 2 pencils

M5. The lines $y = 3x - 2$ and $y = mx + 4$ intersect at $x = 2$. Find the value of m.

$m = 1$