Graphical Simultaneous Equations
### Exam Style Questions

1. Below are the graphs of

$$5y = 7x + 15$$
$$2x + 3y = 15$$
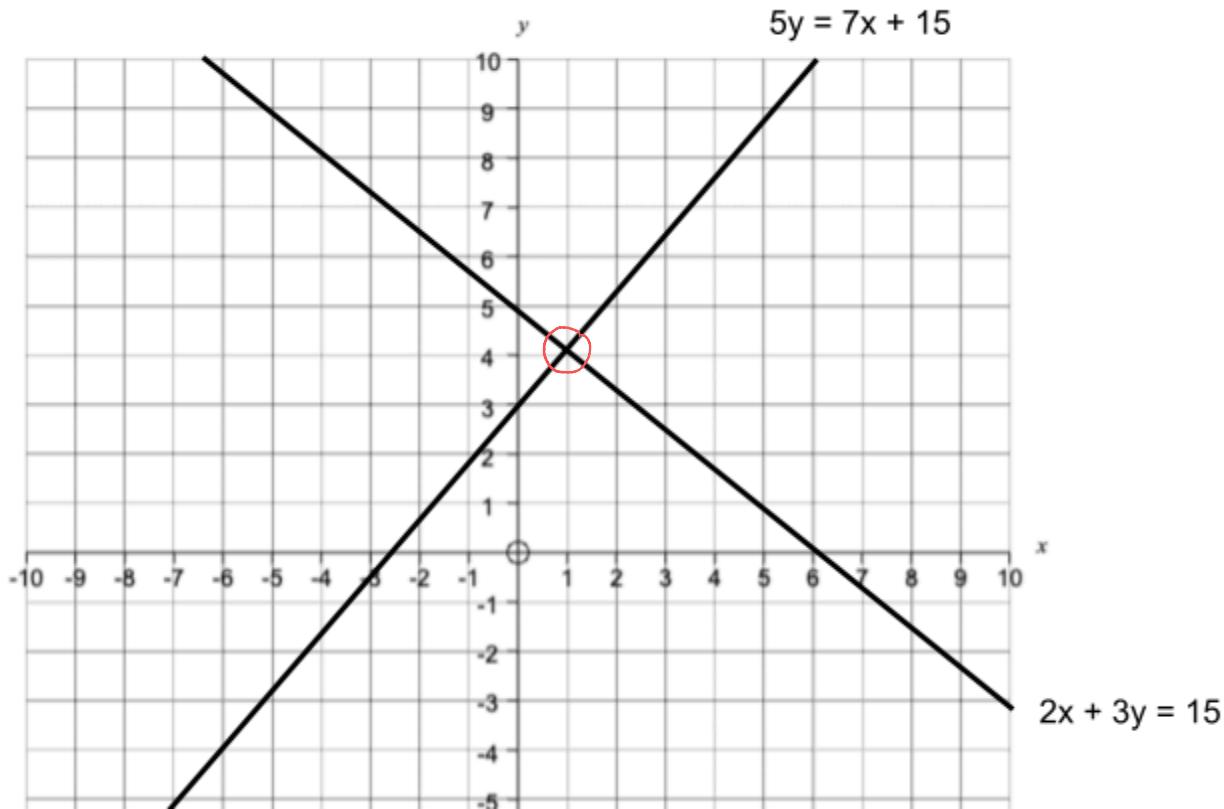
5y = 7x + 15

2x + 3y = 15

Use the graphs to solve the simultaneous equations

$$5y = 7x + 15$$
$$2x + 3y = 15$$

$x =$ ....1..........
$y =$ ....4..........

(2 marks)

2. Below is the graph of $\quad 4x + 3y = 12$
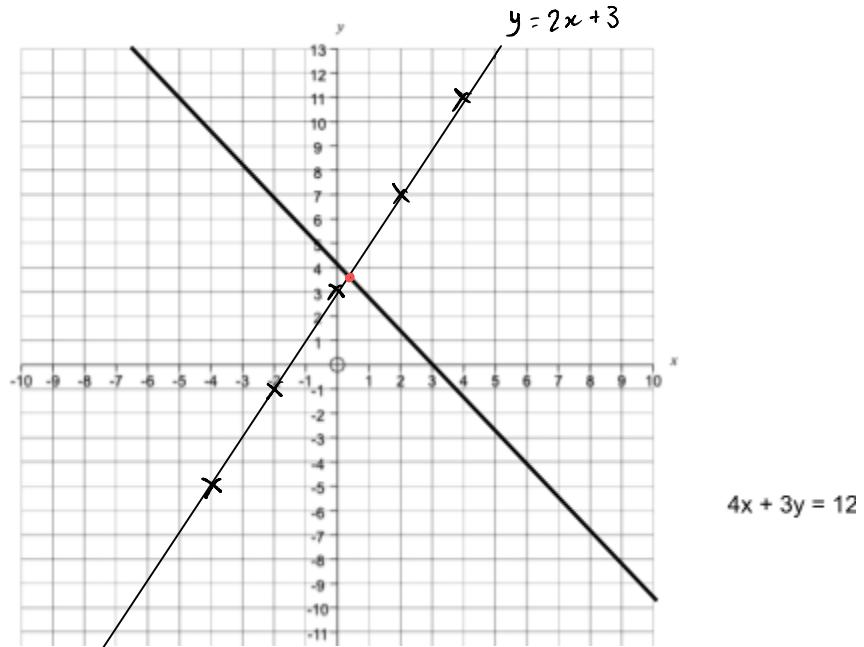
$$y = 2x + 3$$

$$4x + 3y = 12$$

(a) Complete the table of values for the line with the equation $y = 2x + 3$ (2)

x	-4	-2	0	2	4
y	-5	-1	3	7	11
	$2(-4)+3$	$2(-2)+3$	$2(0)+3$	$2(2)+3$	$2(4)+3$

(b) On the above graph, sketch the line with equation $y = 2x + 3$ (1)

(c) Hence, use the graphs to estimate the solutions to the simultaneous equations

$$4x + 3y = 12$$
$$y = 2x + 3$$

$$x = 0.3$$
$$y = 3.6$$

Point of intersection ≈ $(0.3, 3.6)$

(2)

(5 marks)

3. Below are lines with equations $y = x - 3$ and $y = -2x + 12$.
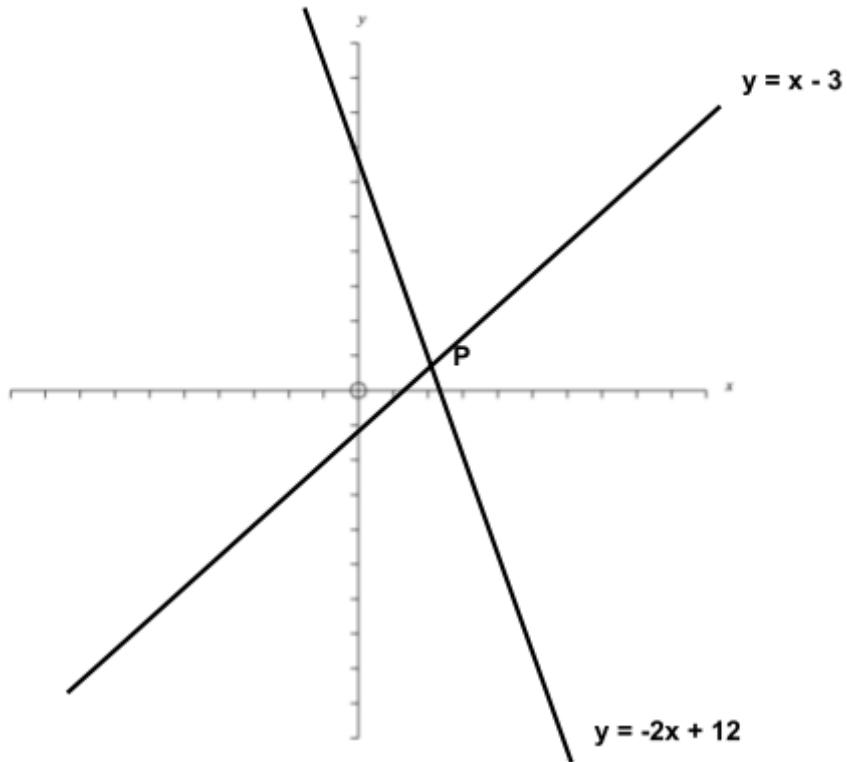
The point P is where the two lines intersect. Find the coordinates of the point P.

$$y = x-3 \qquad \Rightarrow \quad -x+y = -3$$

$$y = -2x+12 \quad \Rightarrow \quad 2x+y = 12$$

$$-3x = -15$$
$$x = 5$$
$$y = 5-3 = 2$$

(...5..., ...2...)

(3 marks)