

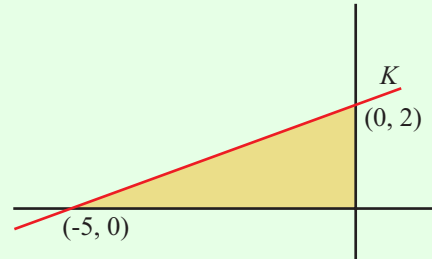
LINEAR PROGRAMMING (Q 11, PAPER 2)

LESSON NO. 2: FINDING INEQUALITIES FROM A DIAGRAM

2007

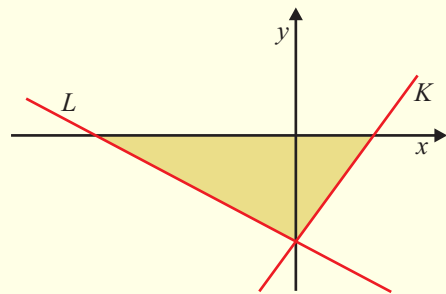
11 (a) The line K cuts the x -axis at $(-5, 0)$ and the y -axis at $(0, 2)$.

- (i) Find the equation of K .
- (ii) Write down the three inequalities that together define the region enclosed by K , the x -axis and the y -axis.



2006

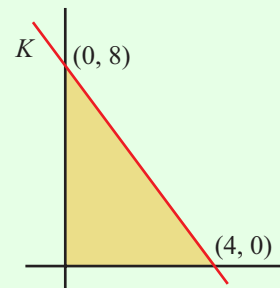
11 (a) The equation of the line L is $5x + 8y + 40 = 0$.
The equation of the line K is $10x - 7y - 35 = 0$.
Write down the 3 inequalities that together define the shaded region in the diagram.



2005

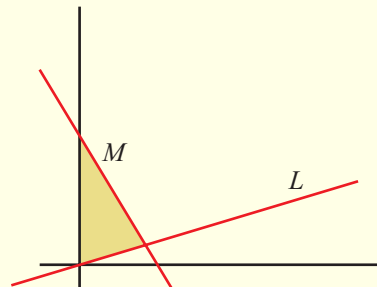
11 (a) The line K cuts the x -axis at $(4, 0)$ and the y -axis at $(0, 8)$.

- (i) Find the equation of K .
- (ii) Write down the three inequalities that together define the region enclosed by K , the x -axis and the y -axis.



2004

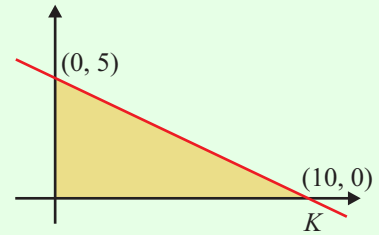
11 (a) The equation of the line L is $x - 2y = 0$.
The equation of the line M is $2x + y = 4$.
Write down the three inequalities that together define the shaded region in the diagram.



2003

11 (a) The line K cuts the x -axis at $(10, 0)$ and the y -axis at $(0, 5)$.

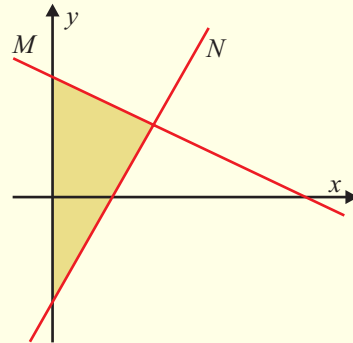
- (i) Find the equation of K .
- (ii) Write down the three inequalities that together define the region enclosed by K , the x -axis and the y -axis.



2002

11 (a) The equation of the line M is $2x + y = 10$.
The equation of the line N is $4x - y = 8$.

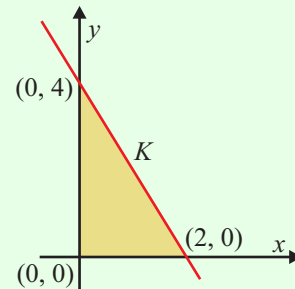
Write down the three inequalities that define the shaded region in the diagram.



2000

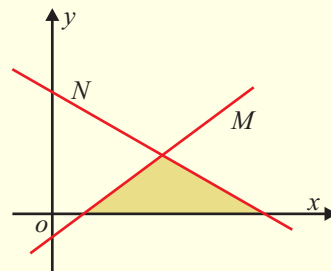
11 (a) The line K passes through the points $(2, 0)$ and $(0, 4)$.

- (i) Find the equation of the line K .
- (ii) Write down three inequalities which define the shaded region in the diagram.



1999

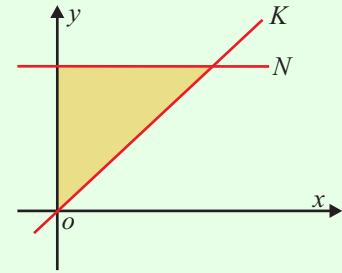
11 (a) The equation of the line M is $x - y - 1 = 0$
and the equation of the line N is $x + 2y - 6 = 0$.
Write down the three inequalities which define the triangular region indicated in the diagram.



1996

11 (a) The equation of the line K is $y - x = 0$
and the equation of the line N is $y - 4 = 0$.

- (i) Write down the three inequalities which define the triangular region indicated in the diagram.
- (ii) In a diagram, illustrate the set of points (x, y) that satisfy $y - 4 \geq 0$, $y - x \leq 0$ and $x - 6 \leq 0$.



ANSWERS

- 2007** 11 (a) (i) $2x - 5y + 10 = 0$ (ii) $x \leq 0, y \geq 0, 2x - 5y + 10 \geq 0$
- 2006** 11 (a) $5x + 8y + 40 \geq 0, 10x - 7y - 35 \leq 0, y \leq 0$
- 2005** 11 (a) (i) $2x + y - 8 = 0$ (ii) $x \geq 0, y \geq 0, 2x + y - 8 \leq 0$
- 2004** 11 (a) $x - 2y \leq 0, x \geq 0, 2x + y \leq 4$
- 2003** 11 (a) (i) $x + 2y - 10 = 0$ (ii) $x + 2y - 10 \leq 0, y \geq 0, x \geq 0$
- 2002** 11 (a) $2x + y \leq 10, 4x - y \leq 8, x \geq 0$
- 2000** 11 (a) (i) $2x + y = 4$ (ii) $2x + y \leq 4, x \geq 0, y \geq 0$
- 1999** 11 (a) $x - y - 1 \geq 0, x + 2y - 6 \leq 0, y \geq 0$
- 1996** 11 (a) (i) $y - x \geq 0, y - 4 \leq 0, x \geq 0$