IGCSE - Inequalities –P4 - 1

Oct 01 Paper 4

8 **Answer the whole of this question on a sheet of graph paper.**

There are x girls and y boys in a school choir.

(a) (i) The number of girls is more than 1.5 times the number of boys in the choir.

Show that $y < \frac{2x}{3}$. [1]

(ii) There are more than 12 girls in the choir.

There are more than 5 boys in the choir.

The maximum number of children in the choir is 35.

Write down three more inequalities. [3]

(b) (i) Using a scale of 2 cm to represent 5 children on each axis, draw an x-axis for $0 \leqslant x \leqslant 40$ and a y-axis for $0 \leqslant y \leqslant 40$. [1]

(ii) Draw 4 lines on your graph to represent the inequalities in **part (a)**.

Shade the **unwanted** parts of the grid. [7]

(c) The school buys a uniform for each choir member.

A girl's uniform costs \$25. A boy's uniform costs \$20.

Find the maximum possible cost for the choir uniforms. Mark clearly the point P on your graph which you use to calculate this cost. [3]

May 04 Paper 4

9 **Answer all of this question on a sheet of graph paper.**

A shop buys x pencils and y pens.
Pencils cost 15 cents each and pens cost 25 cents each.

(a) There is a maximum of \$20 to spend.
Show that $3x + 5y \leqslant 400$. [1]

(b) The number of pens must not be greater than the number of pencils.
Write down an inequality, in terms of x and y, to show this information. [2]

(c) There must be at least 35 pens.
Write down an inequality to show this information. [1]

(d) (i) Using a scale of 1 cm to represent 10 units on each axis, draw an x-axis for $0 \leqslant x \leqslant 150$ and a y-axis for $0 \leqslant y \leqslant 100$. [1]

(ii) Draw three lines on your graph to show the inequalities in **parts (a), (b) and (c)**.
Shade the **unwanted** regions. [5]

(e) When 70 pencils are bought, what is the largest possible number of pens? [1]

(f) The profit on each pencil is 5 cents and the profit on each pen is 7 cents.
Find the largest possible profit. [3]