5 (a) On the grid opposite, draw the graphs of the lines with equations

$$2x + 3y = 24 \qquad y = 2x \qquad 3y = 2x - 12$$

(3)

(b) Show, by shading on the grid, the region R defined by the inequalities

$$2x + 3y \leqslant 24 \qquad y \leqslant 2x \qquad 3y \geqslant 2x - 12 \qquad y \geqslant 0$$

(1)

For all points in R, with coordinates (x, y)

$$F = 2x + 5y$$

(c) Find the greatest value of F.

(3)

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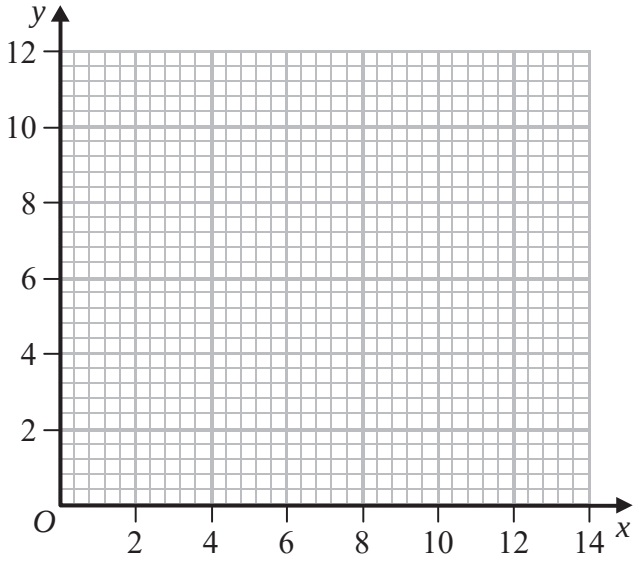
Question 5 continued



Turn over for a spare grid if you need to redraw your graphs.

Question 5 continued

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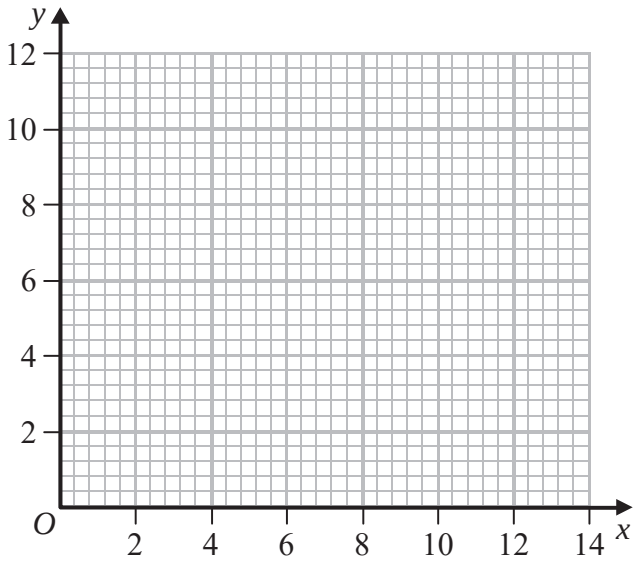
Question 5 continued

Only use this grid if you need to redraw your graphs.



(Total for Question 5 is 7 marks)