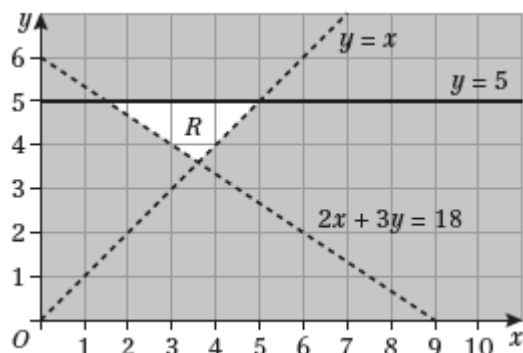
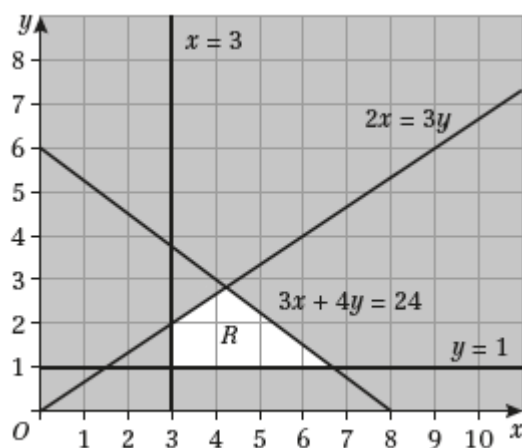


Exercise 7B

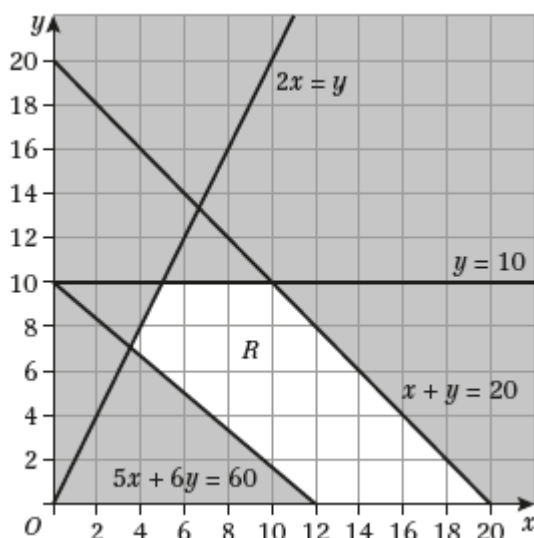
1 a As $x, y \geq 0$ is one of the constraints, we restrict our attention to the first quadrant.



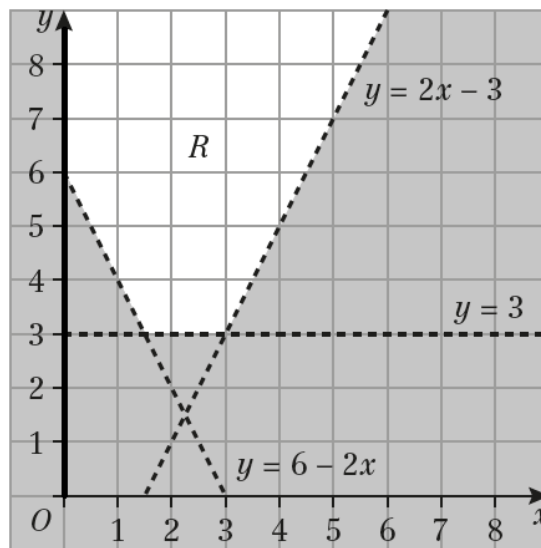
b All lines are solid as none of the inequalities is strict.



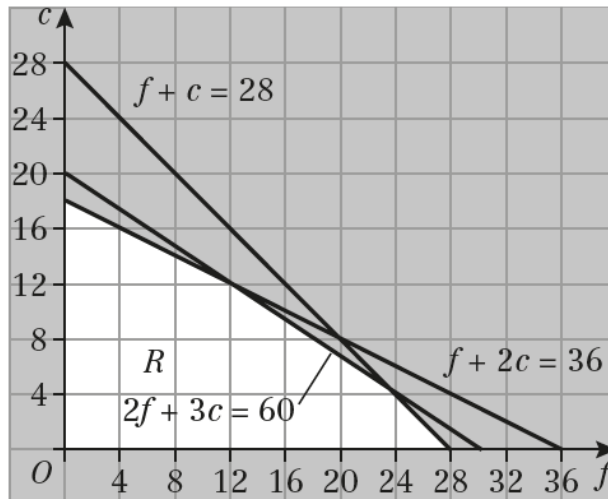
c R is unbounded in this case.



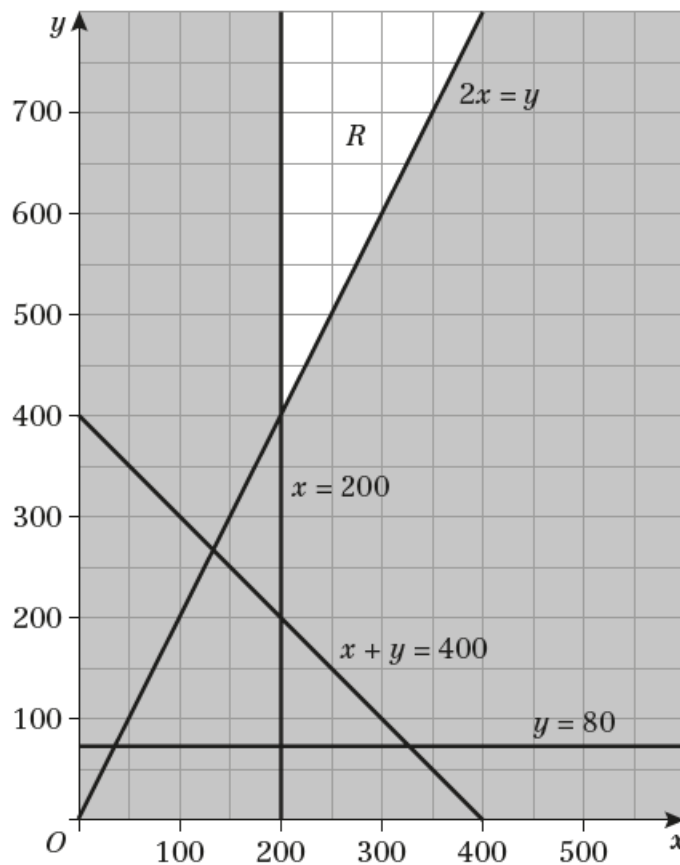
- 1 d We use a dashed line when the constraint inequality is strict.



- 2 We are only interested in the feasible region, so we do not consider the objective function.



- 3 Feasible region is unbounded in this case.

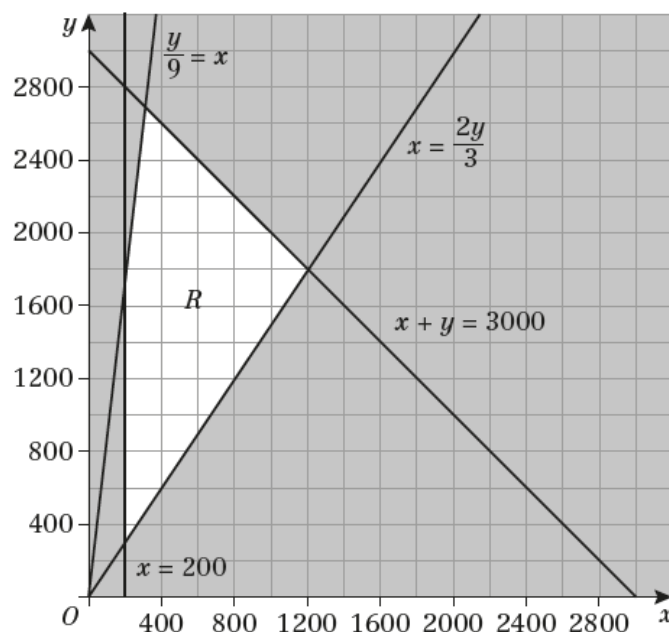


- 4 Let x represent the number of type A and y represent the number of type B .
The constraints translate to $x \geq 200$, $0.1(x + y) \leq x \leq 0.4(x + y)$ and $x + y \leq 3000$.

Simplifying: $x \geq 200$, $\frac{y}{9} \leq x \leq \frac{2y}{3}$ and $x + y \leq 3000$

Non-negativity constraint $y \geq 0$ (positivity of x is enforced by $x \geq 200$).

Objective function is irrelevant for the question.



5 a The bounding lines are $y = \frac{x}{4}$ and $y = \frac{x}{2} + 10$, so the respective constraints are

$$y \geq \frac{x}{4} \text{ and } y \leq \frac{x}{2} + 10$$

b

