



Q	Answer	Marks
1	Triangle region with vertices (1, 2), (4, 2), (1, 5): solid boundary on $x = 1$, dashed boundaries on $y = 2$ and $x + y = 6$	3
2	Region bounded by $y = 3$ (solid, below), $y = x - 1$ (solid, above) and $x = 0$ (dashed, right of); vertices (0, -1), (0, 3), (4, 3)	3
3	a) dashed b) solid c) solid d) dashed	2
4	(1, 2), (1, 3), (1, 4), (2, 2), (2, 3), (3, 2)	3
5	No: at (2, 2) the inequality $y > x$ is not satisfied because 2 is not greater than 2; the point is on the boundary line $y = x$, which is not included	3
6	a) $x >= 2$ b) $y >= 1$ c) $x + y <= 7$	4
7	The interior of the triangle with boundary intersections (1/2, 1), (5, 1), (2, 4); all three edges are dashed and excluded. $x > 0$ holds automatically and $x = 0$ is not an edge of R.	4
8	(1, 1), (1, 2), (1, 3), (2, 1), (2, 2), (3, 1)	3
9	P, Q and T	3
10	$x \geq 1$, $y > 2$, $x + y \leq 8$	3
11	a) $y >= 1$ b) $x <= 4$ c) $y <= x + 1$	4
12	a) Shaded triangle bounded by $y = 1$, $x + y = 8$ and $y = 3x - 1$, all solid; vertices (2/3, 1), (7, 1), (9/4, 23/4) b) At (3, 8), $x + y = 11$, which is greater than 8, so the inequality $x + y <= 8$ fails	5
13	$y \geq x/2 + 1$, $y \leq 3$, $x \geq 0$	4
14	7	5
15	a) $y >= 1$ b) $y <= 2x + 1$ c) $x + y <= 7$	5
16	a) 15 b) 13	5

Full worked solutions, written out by hand, are on the solutions sheet for this topic.