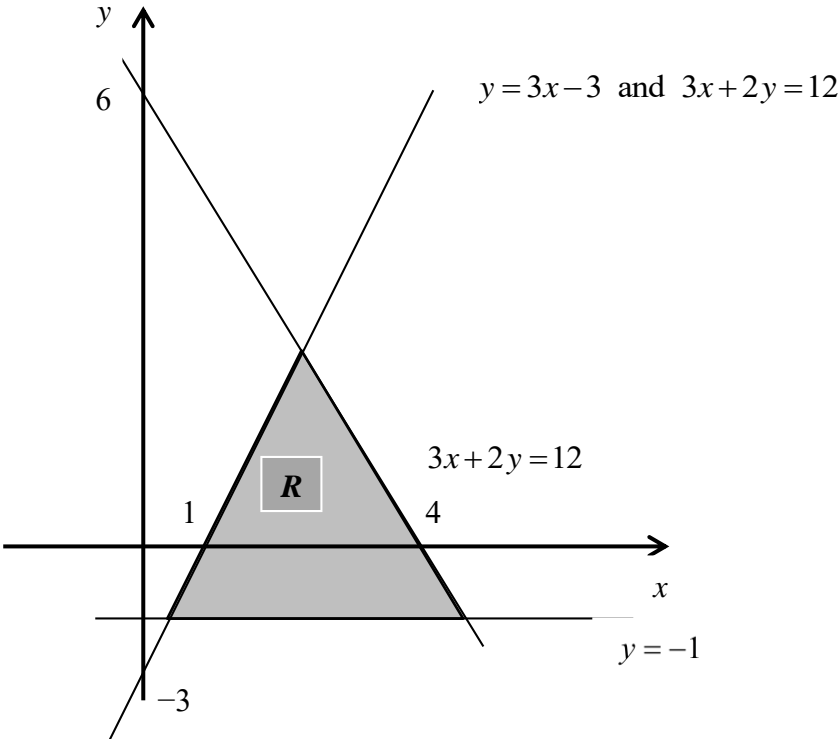


Question number	Scheme	Marks												
2 (a)		B1 B1 (2)												
(b)	Correct line drawn $y = -1$ Correct region shaded	B1 B1 (2)												
(c)	<table><tr><td>Vertex</td><td>$(2,3)$</td><td>$\left(\frac{14}{3}, -1\right)$</td><td>$\left(\frac{2}{3}, -1\right)$</td></tr><tr><td>$P = 4x - y$</td><td>5</td><td>$\frac{59}{3}$</td><td>$\frac{11}{3}$</td></tr><tr><td></td><td></td><td>greatest</td><td></td></tr></table>	Vertex	$(2,3)$	$\left(\frac{14}{3}, -1\right)$	$\left(\frac{2}{3}, -1\right)$	$P = 4x - y$	5	$\frac{59}{3}$	$\frac{11}{3}$			greatest		M1A1 M1A1 (4) [8]
Vertex	$(2,3)$	$\left(\frac{14}{3}, -1\right)$	$\left(\frac{2}{3}, -1\right)$											
$P = 4x - y$	5	$\frac{59}{3}$	$\frac{11}{3}$											
		greatest												

Additional Notes		
Part	Mark	Guidance
(a)	B1	Either $y = 3x - 3$ or $3x + 2y = 12$ drawn correctly Intersections on axes of $y = 3x - 3$ are $(0, -3)$ and $(1, 0)$ Intersections on axes of $3x + 2y = 12$ are $(4, 0)$ and $(0, 6)$
	B1	Both $y = 3x - 3$ and $3x + 2y = 12$ drawn correctly.
(b)	B1	Line $y = -1$ drawn correctly and marked. This line can be implied by the shading.
	B1	Correct region shaded in or out. R need not be explicitly labelled
(c)	M1	For attempting to find correct coordinates of at least one intersection with the line $y = -1$. i.e. either $\left(\frac{14}{3}, -1\right)$ or $\left(\frac{2}{3}, -1\right)$. Accept 4.6, 4.7, 4.8 or 0.6, 0.7, 0.8 (from their graph) for this mark.
	A1	This is an M mark in Epen. For $\left(\frac{14}{3}, -1\right)$ Accept 4.6, 4.7, 4.8 for $\frac{14}{3}$
	M1	For substituting their $\left(\frac{14}{3}, -1\right)$ into P . Allow 4.6, 4.7 or 4.8 (from their graph) for this mark.
	A1	For $P = \frac{59}{3}$ Accept awrt 19.7
	ALT	
	M1	Slope of objective function line is 4 Identifies the intersection of $3x + 2y = 12$ and $y = -1$ as the point where P is greatest and attempts to find the point of intersection by
	A1	This is an M mark in Epen. For finding $\left(\frac{14}{3}, -1\right)$ Accept 4.6, 4.7, 4.8 for $\frac{14}{3}$
	M1	For substituting their $\left(\frac{14}{3}, -1\right)$ into P . Allow 4.6, 4.7 or 4.8 (from their graph) for this mark.
	A1	For $P = \frac{59}{3}$ Accept awrt 19.7