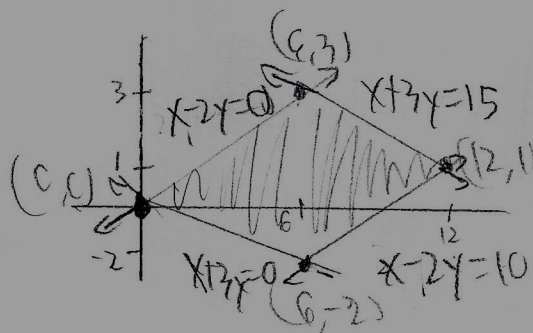


7) $S = \{ (u, v) \mid u \in [0, 3] \wedge v \in [0, 2] \}$ points: u, v
 $x = 2u + 3v$ $y = u - v$
 $(0,0)$ $(3,0)$
 $(0,2)$ $(3,2)$

(u, v)	(x, y)
$(0,0)$	$(0,0)$
$(0,2)$	$(6,-2)$
$(3,0)$	$(6,3)$
$(3,2)$	$(12,1)$



A parallelogram with vertices $(0,0)$, $(6,3)$, $(6,-2)$, $(12,1)$

$$\frac{dy}{dx} = -\frac{1}{3} \quad y = -\frac{1}{3}x$$

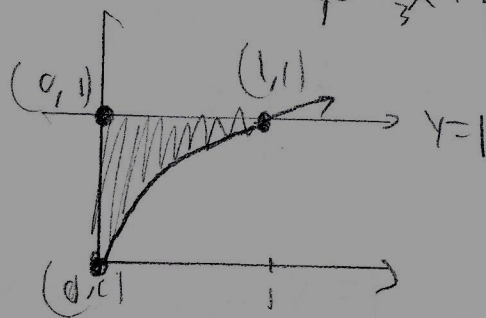
$$x + 3y = 0$$

$$y = -\frac{1}{3}x + 5 \quad 0 \leq x + 3y \leq 15$$

$$x + 3y = 15$$

$\frac{1+2}{12-0} = \frac{1}{2}$ $y = \frac{1}{2}x - 5$ $\frac{3-0}{6-0} = \frac{1}{2}$ $y = \frac{1}{2}x$
 $x = 2y$ $x - 2y = 0$ $x - 2y = 10$

9) (u, v) (x, y)
 $(0,0)$ $(0,0)$
 $(1,0)$ $(1,0)$
 $(0,1)$ $(0,1)$
 $x = u^2$ $y = v$
 $u = \sqrt{x}$ $v = y$
 (\sqrt{x}, y)
 $y = \sqrt{x}$



$c=0$ $y=1$
 $1=1$ $x=0$
 $0 \neq 1$

The region bounded by $x=0$, $y=1$, and $y=\sqrt{x}$

11) $y = 2x - 1 \Rightarrow y - 2x = -1$
 $y = 2x + 1 \Rightarrow y - 2x = 1$
 $y = 1 - x \Rightarrow y + x = 1$
 $y = 3 - x \Rightarrow y + x = 3$

$u = y - 2x$
 $v = y + x$

$x = v - u$

$v = y - 2v + 2y$
 $y = \frac{2v + u}{3}$

$x = \frac{v - 2v + u}{3}$

$x = \frac{v - u}{3}$

$S = \{ (u, v) \mid u \in [-1, 1] \wedge v \in [1, 3] \}$
 $x = \frac{v - u}{3}$ $y = \frac{2v + u}{3}$