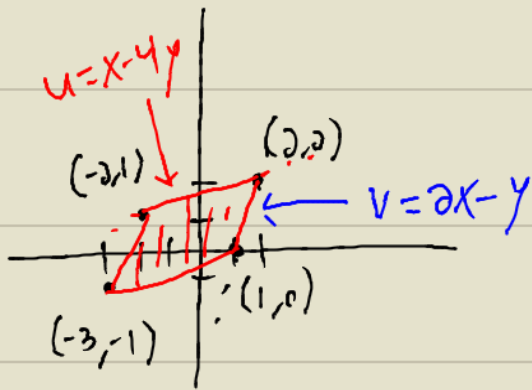
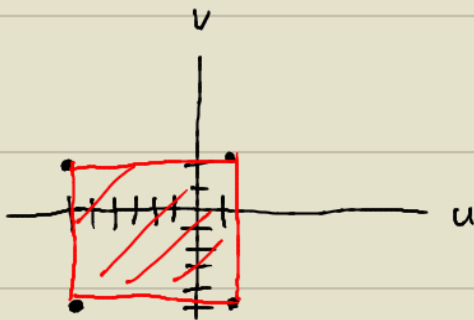


4. $(-2, 1)$ $(2, 2)$ $(-3, -1)$ $(1, 0)$



$$u = x - 4y \quad v = 2x - y$$

(x, y)	$u = x - 4y$	$v = 2x - y$	(u, v)
$(-2, 1)$	-6	-5	$(-6, -5)$
$(2, 2)$	-6	2	$(-6, 2)$
$(-3, -1)$	1	-5	$(1, -5)$
$(1, 0)$	1	2	$(1, 2)$



$$\int_{v=-5}^{v=2} \int_{u=-6}^{u=2} du dv$$

① $(-2, 1)$ $(2, 2)$

$$m = \frac{2-1}{2-(-2)} = \frac{1}{4}$$

$$y = mx$$

$$y = \frac{1}{4}x$$

$$4y = x$$

$$0 = x - 4y$$

② $(2, 2)$ $(1, 0)$

$$m = \frac{2-0}{2-1} = 2$$

$$y = mx$$

$$y = 2x$$

$$0 = 2x - y$$

JACOBIAN

$$u = x - 4y \quad v = 2x - y$$

$$y = 2x - v$$

$$u = x - 4(2x - v)$$

$$u = x - 8x + 4v$$

$$u - 4v = -7x$$

$$-\frac{1}{7}(u - 4v) = x$$

$$u = x - 4y \quad v = 2x - y$$

$$u + 4y = x \quad v = 2(u + 4y) - y$$

$$v = 2u + 8y - y$$

$$v = 2u + 7y$$

$$-7y = 2u - v$$

$$y = -\frac{1}{7}(2u - v)$$