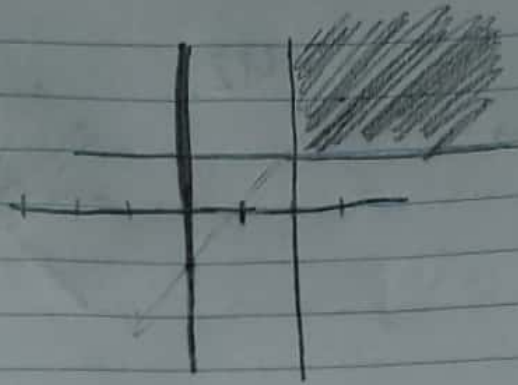


14.1

13. $x-2 \geq 0$ $y-1 \geq 0$
 $\{(x,y) \mid x \geq 2, y \geq 1\}$



14. $x-3y \geq 0$ $y \leq \frac{x}{3}$



$\{(x,y) \mid x \geq 3y\}$

15. $9-x^2-9y^2 > 0$
 $\frac{1}{9}x^2 + y^2 < 1$

$\{(x,y) \mid \frac{1}{9}x^2 + y^2 < 1\}$



16. $x^2+y^2-4 \geq 0$ $\{(x,y) \mid x^2+y^2 \geq 4\}$



32. a) III, as x and $y \rightarrow 0$,
 $f(x,y) \rightarrow (0,0,1)$

b) I, if either x or $y = 0$,
 $f(x,y) = 1$

c) IV, graph of $\ln(x)$ is plotted
 around $x=0$ and $x=3$

33. $f(3,3) \approx 57$

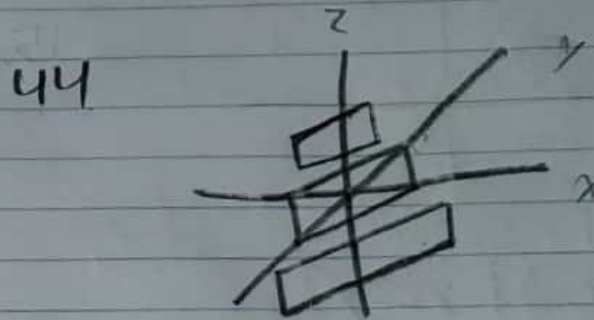
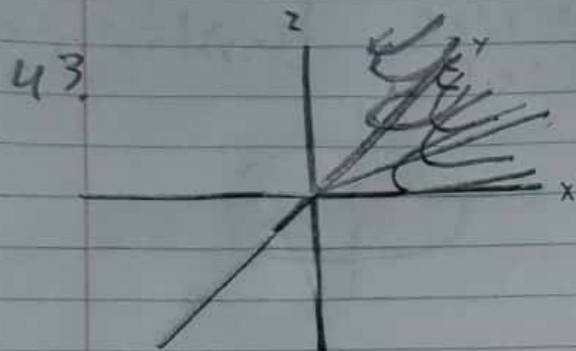
$f(3,-2) \approx 36$

d) V, f has cosine curve in circle
 $x^2 + y^2 = 1$

e) VI, $f(x,y) = 0$ when either $x=0$ or $y=0$

f) VII, $f(x,y) = 1$ when either $x=0$ or $y=0$
 because $\cos(0) = 1$

36. I is the paraboloid
 because its slope is
 not constant, where as
 II is a cone because
 the edge of a cone has
 a constant slope and a
 constant change in radius



61. C, II, when either x or $y = 0$, $z = 0$, follows sin curve

62. A, IV, as x increases, z increases exponentially, follows cos curve

63. F, I, $z = 0$ along $y = x$, when $x = 0$ $z = \sin y$, when $y = 0$ $z = \sin x$

64. E, III, plane of z curves

65. B, VI, upside down paraboloid, exponential plane

66. D, V, paraboloid on both axes (when $x = 0$ or $y = 0$)