

$$8. f(x, y) = \frac{7xy}{x-3y}$$

$$x-3y=0$$

$$x=3y$$

$$\text{Domain: } \{(x, y) \mid x \neq 3y\}$$

$$\text{Range: } \{z \mid z \neq 0\}$$

$$9. f(x, y) = \sqrt{1-x^2-y^2}$$

$$1-x^2-y^2 \geq 0$$

$$1 \geq x^2+y^2$$

$$x^2+y^2 \leq 1$$

$$\text{Domain: } \{(x, y) \mid x^2+y^2 \leq 1\}$$

$$\text{Range: } \{z \mid z \geq 0\}$$



$$10. f(x, y) = 2+3x-y$$

$$11. f(x, y) = 3\sqrt{x^2+y^2}$$

$$12. f(x, y) = e^x$$