**Problems**

***Due Date*: 22 July, 2024**

**Find the domain and range of the function.**

19. *f* (*x*, *y*) = *x*2 + *y*2

20. *f* (*x*, *y*) = *exy*

21. *g* (*x*, *y*) = *x*

22. *f* (*x*, *y*) =

23. *z* =

24. *z* =

25. *f* (*x*, *y*) =

26. *f* (*x*, *y*) =

27. *f* (*x*, *y*) = arccos (*x* + *y*)

28. *f* (*x*, *y*) = arcsin (*y*/*x*)

29. *f* (*x*, *y*) = ln(4 – *x* – *y*)

20. *f* (*x*, *y*) = ln(*xy* – 6)

**Sketch the surface given by the function.**

**33.** *f* (*x*, *y*) = 4

**34.** *f* (*x*, *y*) = 6 − 2*x* − 3*y*

**35.** *f* (*x*, *y*) = *y*2

**36.** *g* (*x*, *y*) = *y*

**37.** *z* = −*x*2 − *y*2

**38.** *z* =

**39.** *f* (*x*, *y*) = *e*−*x*

**Describe the level curves of the function. Sketch a contour map of the surface using level curves for the given *c*-values.**

**49.** *z* = *x* + *y*

**50.** *f* (*x*, *y*) = 6 − 2*x* − 3*y*

**51.** *z* = *x*2 + 4*y*2

**52.** *f* (*x*, *y*) =

**53.** *f* (*x*, *y*) = *xy*