1 13.1

27: \( f(x, y) = \arccos(x + y) \). Domain=\( \{(x, y) \in \mathbb{R}^2; |x + y| \leq 1\} \). Range=\([0, \pi]\).

38: \( z = \frac{1}{2} \sqrt{x^2 + y^2} \). The graph of this function is the upper half of an elliptical cone:

\[
z^2 = \frac{1}{4}(x^2 + y^2), \quad z \geq 0.
\]

See figure 1.

45-48: (a)\(\longleftrightarrow\) (48); (b)\(\longleftrightarrow\) (47); (c)\(\longleftrightarrow\) (45); (d)\(\longleftrightarrow\) (46).

52: The level curves for \( f(x, y) = \sqrt{9 - x^2 - y^2} \) are: \( \sqrt{9 - x^2 - y^2} = c \). The level curves form a family of circles: \( x^2 + y^2 = 9 - c^2 \) with common center \((0, 0)\). Note that \( c \) needs to satisfy \(|c| \leq 3\). See figure 2.