

Partial solutions for 11 12 15 18 21

11.  $f(1, 1, 1) = 3$ . Domain:  $\{(x, y, z) \mid x^2 + y^2 + z^2 < 4, x, y, z \geq 0\}$
12.  $g(1, 2, 3) = 24$ . Domain:  $\{(x, y, z) \mid z \leq 10 - x - y\}$
15.  $\{(x, y) \mid \frac{1}{9}x^2 + y^2 < 1\}$
18.  $\{(x, y) \mid x < 2, x^2 + y^2 \neq 1\}$
21.  $\{(x, y, z) \mid -2 \leq x \leq 2, -3 \leq y \leq 3, -1 \leq z \leq 1\}$ . Forms a rectangle.