Math 21A
Vogler
Worksheet 1

1.) Determine the domain and range of each function.

   a.) $f(x) = 9 - x^2$

   b.) $f(x) = 3\cos 4x$

   c.) $y = 5 + \sqrt{16 - x}$

   d.) $g(x) = -\sqrt{625 - x^2}$

   e.) $y = x + |x| + 3$

   f.) $f(x) = \begin{cases} x^2 + 4, & \text{if } x < -1 \\ 3 - x^2, & \text{if } x \geq -1. \end{cases}$

2.) Determine the domain for $f(x) = \dfrac{7}{3 - \sqrt{x^2 - 16}}$.

3.) Let $f(x) = \dfrac{x}{3 - x}$ and $g(x) = \dfrac{x - 2}{x + 4}$.

   a.) Determine $(f \circ g)(x)$.

   b.) Determine $(g \circ f)(x)$.

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