

Math 21A  
Kouba  
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  $f(x) = \frac{7}{3 - \sqrt{x^2 - 16}}$ .

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

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

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