

Mathematical Sciences 106  
Section 1.1 and 1.2 Learning Activity  
Functions and Transformations  
August 29, 2011

Name: \_\_\_\_\_

Group members: \_\_\_\_\_

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1. Use interval notation to write the domain of each of the following functions:

a.  $f(x) = \sqrt{x^2 - 5}$

b.  $f(x) = \frac{1}{\sqrt{x^2 - 5}}$

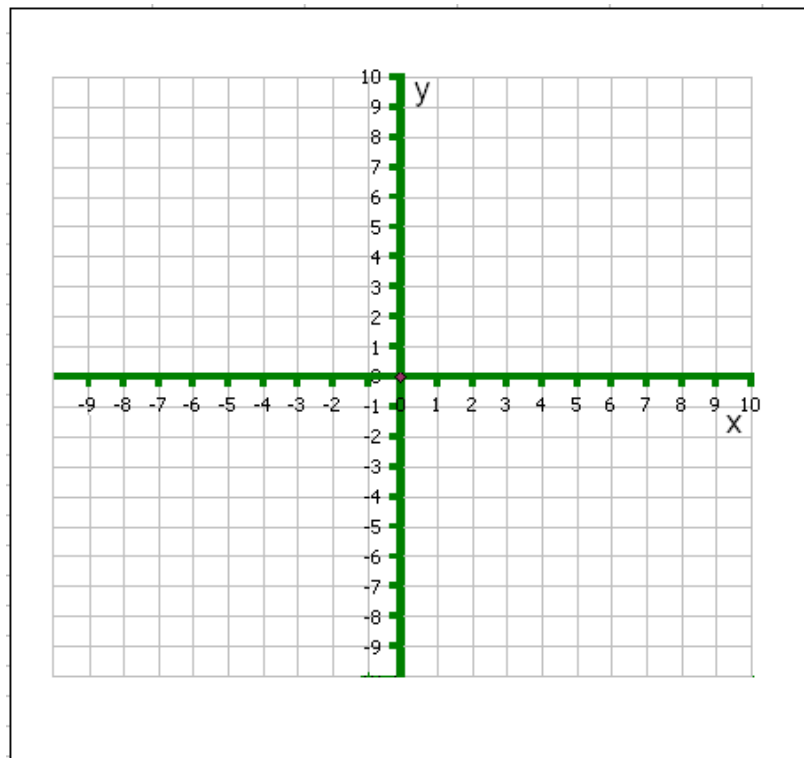
2. Let  $f(x) = 2x - 1$ ,  $g(x) = x^2$  and  $h(x) = \sin(x)$ . Find

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

b.  $(f \circ h)(x)$

c.  $(f \circ g \circ h)(x)$

3. Graph the following function:  $f(x) = \begin{cases} -2x - 1 & \text{if } x < -1 \\ 1 & \text{if } -1 \leq x \leq 1. \\ 2x - 1 & \text{if } x > 1 \end{cases}$



4. If you have the graph  $y = f(x)$ , how do you obtain:
- $y = f(x + 2)$
  - $y = -3f(x)$
  - $y = f(3x)$
  - $y = 4f(x - 6) + 9$