

Assignment #1-6

Secondary 3 Honors

Precalculus Book:

Pg. 69 – 72 10a, 21 – 24, 37, 47, 53, 63, 69, 79, 101, 108

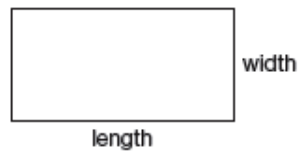
Review Problems:

- Given the piecewise function $f(x) = \begin{cases} 2x-3 & x > 1 \\ x^2-2 & x \leq 1 \end{cases}$
 - Graph the function.
 - find the following: $f(5)$ $f(-2)$
- Find the domain of the function. $f(x) = \frac{1}{\sqrt{x-3}}$
- $f(x) = \sqrt{x+2}$, $g(x) = x^2 - 1$ find the following:
 - $(f \circ g)(x)$
 - $(g \circ f)(x)$ and the Domain
 - $\left(\frac{g}{f}\right)(x)$ and the Domain
- Given the function $f(x) = x^2 - 2$, $x \geq 0$ find:
 - Range of $f(x)$
 - $f^{-1}(x)$
 - Domain and Range of $f^{-1}(x)$
 - Graph $f(x)$ and $f^{-1}(x)$
- Complete the problem on the back of this page.

Water Under the Bridge

Modeling with Functions

1. Mr. Jones wants to fence in a rectangular field for his horse using the 600 feet of fence he has stored in his barn. He wants to maximize the area of the field in order to give his horse the most pasture possible. Help Mr. Jones design his field to achieve the maximum area.



- a. Complete the table to show the length of the field for each given width.

Width (feet)	0	50	100	150	200	250	300
Length (feet)							

- b. Define the function $\ell(w)$ to represent the length of the field as a function of the width. Explain your reasoning.
- c. Define the function $A(w)$ to represent the area of the field as a function of the width. Explain your reasoning.
- d. Determine the maximum area of the field as well as the length and width that will result in the maximum area. Explain your reasoning.