Math 220 − Homework 9

Due Thursday 11/10 at the beginning of class

PART A

Problems from the textbook:

Section 3.3 # 1(b,c); 2(b), 10(b,c,d), 11, 12, 14.

PART B

1. The functions $f, g \in F(\mathbf{R})$ defined by $f(x) = 2x + 1$ and $g(x) = 3x - 5$ are bijective. Determine the inverse function of $g \circ f^{-1}$.

2. Let $a, b \in \mathbb{R} - \{0\}$ and let functions $f, g \in F(\mathbf{R})$ be defined by

$$f(x) = ax + b, \quad g(x) = x + \frac{b}{a}.$$

   Compute the *inverse* function of $g \circ f^{-1}$.

3. Let $A = \{1, 2, 3, 4\}$, $B = \{a, b, c\}$, and $C = \{w, x, y, z\}$. Consider the functions $f \in F(A, B)$ and $g \in F(B, C)$ defined by their graphs

$$G_f = \{(1, b), (2, c), (3, c), (4, a)\}, \quad G_g = \{(a, x), (b, y)(c, x)\}.$$

   Compute $g \circ f$.