

Homework 11

due Thursday, November 14

1. Prove that if f and g are functions that are increasing on an interval I , then the function $f + g$, defined by $(f + g)(x) = f(x) + g(x)$, is also increasing on I .
2. Assume that a, b, c, d are nonzero real numbers. Define function $h: \mathbb{R} - \{d/c\} \rightarrow \mathbb{R}$ by

$$h(x) = \frac{ax - b}{cx - d}$$

Prove that h is one-to-one if and only if $ad \neq bc$.