

Math 215
Homework 2
Due Friday, September 5

Read section 3. Exercises from the text: 2.5, 2.6, 3.2, 3.4, 3.5, 3.7

To turn in:

Use properties of the real numbers in the handout for the following exercises. You may also cite examples that we did in class. Be sure to justify every step.

1. Prove that

$$-(-x) = x$$

for all x .

2. Recall that the fraction x/y is by definition the product $x \cdot \frac{1}{y}$, which is defined whenever $y \neq 0$. Prove that

$$\frac{a}{b} = \frac{(ac)}{(bc)}$$

if $b, c \neq 0$.

3. Prove that

$$\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$$

if $b, d \neq 0$. You may use the result of exercise 2.

4. Prove that

$$\frac{(a/b)}{(c/d)} = \frac{(ad)}{(bc)}$$

if $b, c, d \neq 0$.