

MATH 287 HOMEWORK 7

ANDREW MOORE

Exercise 1. Type in the piecewise definition of the Fibonacci numbers.

Date: October 29, 2021.

Exercise 2. Proposition 8.18: For all $m, n \in \mathbf{R}$, $(-m)(-n) = mn$.

Exercise 3. Proposition 8.32: For all $x, y, z, w \in \mathbf{R}$:

- (1) If $x < y$ then $x + z < y + z$.
- (2) If $x < y$ and $z < w$ then $x + z < y + w$.
- (3) If $0 < x < y$ and $0 < z \leq w$ then $xz < yw$.
- (4) If $x < y$ and $z < 0$ then $yz < xz$.

Claim 3.1. If $x < y$ then...

Proof. (Your proof)

□

Claim 3.2. If $x < y$ and $z < w$ then...

Proof. (Your proof)

□

Exercise 4. Proposition 8.53: Every nonempty subset of \mathbf{R} that is bounded below has a greatest lower bound.