exercise 1:
Using the fundamental properties of inequalities on $\mathbb{Q}$ stated in class, show that for all x in $\mathbb{Q}$, $0 \leq x^2$.

exercise 2:
Let x_1, x_2, x_3, x_4 be in $\mathbb{Q}$. Using the fundamental properties of inequalities on $\mathbb{Q}$ stated in class, show that if $x_1 \leq x_2$ and $x_3 \leq x_4$, then $x_1 + x_3 \leq x_2 + x_4$.

exercise 3:
Prove or disprove: if x_1, x_2, x_3, x_4 in $\mathbb{Q}$ satisfy $x_1 \leq x_2$ and $x_3 \leq x_4$, then $x_1 x_3 \leq x_2 x_4$.

exercise 4:
Using properties of the absolute value function on $\mathbb{Q}$ shown in class, prove that for all x in $\mathbb{Q}$ if $x \neq 0$, $|\frac{1}{x}| = \frac{1}{|x|}$.

exercise 5:
Write the rational number 32.117171717... where the periodic pattern is 17, as a quotient of two integers.