Problem 1. Arrange the following real numbers in increasing order:
\[-\frac{1}{2}, \frac{2}{3}, \frac{15}{23}, -\frac{6}{13}, -\frac{28}{39}, 0.\]

Problem 2. Find the decimal representation of \(\frac{2}{11}\).

Problem 3. Express as a fraction the rational number whose decimal representation is 15.35197.

Problem 4. How many rational numbers are there between 2 and 5? Explain.

Problem 5. Find a rational number \(x\) and an irrational number \(y\) such that \(0.52 < x < y < 0.53\).

Problem 6. Solve \(\frac{2x + 11}{x^2 - 4} \geq 1\).

Problem 7. Solve \(\sqrt{2x^2 - 1} > x\).

Problem 8. Solve \(|x - 3| \leq 5|x + 2|\).

Problem 9. Solve \(|3x^2 - 5| < 7\).

Problem 10. Use the triangle inequality to prove that \(|x| < \frac{\pi}{2} \implies |\pi - x| > \frac{\pi}{2}|\).