Algebra II | Activity 0103 | Name:
Dr. Paul L. Bailey | Wednesday, January 3, 2023

Problem 1. (Domain and Holes)
State domain of the given rational function. Then, state its zeros, poles, and holes.

(a) $\dfrac{x^2 - 2x - 15}{x^2 - 7x + 10}$

(b) $\dfrac{x^3 - x}{x^2 - 6x + 5}$

Problem 2. (Rational Inequalities)
Draw a sign chart for the given rational function. Then, solve the given inequality. State the solution set.

(a) $\dfrac{x^2 - 3x - 10}{x^2 - 6x + 8} \geq 0$

(b) $\dfrac{x^2 - 7x + 12}{x^2 - 7x - 30} < 0$

Problem 3. (Adding Rational Functions)
Add the rational functions.

(a) $\dfrac{1}{x} + \dfrac{x+1}{x+2}$

(b) $\dfrac{x+1}{x+4} + \dfrac{x+2}{x+3}$

Problem 4. (Solving Rational Equations)
Solve the rational equation. Write the solution set.

(a) $\dfrac{1}{x} = \dfrac{x+1}{x+2}$

(b) $\dfrac{x+1}{x+4} = \dfrac{x+2}{x+3}$