Lesson 8.6 Warm Up (Clickers)

1. Identify points of discontinuity and identify removable and/or nonremovable discontinuities: $\frac{3x - 9}{x^2 - 3}$

3. Subtract: $\frac{3x}{4x - 8} - \frac{5}{x^2 + x - 6}$

Lesson 8.6 Solving Rational Equations

Essential Understanding: To sove an equation containing rational expressions, first multiply each side by the least common denominator of the rational expressions. Doing this, however, can introduce extraneous solutions.

A rational equation contains at least one rational expression. You can simplify solving a rational equation if you first clear the equation of denominators. You can do this by multiplying by the LCD of the rational expressions in the equation.

Ex. What are the solutions of the rational equation?

$$\frac{x}{x-3} + \frac{x}{x+3} = \frac{2}{x^2-9}$$

Ex. What are the solutions of the rational equation?

$$\frac{x-1}{x^2+3x+2} + \frac{2x}{x+2} = \frac{x-1}{x+1}$$

Ex. What are the solutions of the rational equation?

$$\frac{x}{x+1} + \frac{3}{x+4} = \frac{x+3}{x+4}$$

1 What are the solutions of the rational equation?

$$\frac{x-1}{x+2} = \frac{x^2+2x-3}{x+2}$$

2 What are the solutions of the rational equation?

$$\frac{1}{x^2-5x} + \frac{x-7}{x} = \frac{4}{x^2-5x}$$

A flight across the U.S. takes longer east to west than it does west to east. Assume that winds are constant in the eastward direction. When flying westward, the headwind deceases the airplane's speed. When flying eastward, the tailwind increases it speed. The time for a round trip shown below is 7.75 hours. If the airplane cruises at 480 mi/h, what is the speed of the wind?

Remember: D = r * t

	Distance	Rate	Time
Going west to east	1850	$480 + x$	$\frac{1850}{480+x}$
Going east to west	1850	$480 - x$	$\frac{1850}{480-x}$

Ex. You ride your bike to a store, 4 mi away, to pick up things for dinner. When there is no wind you ride at 10 mi/h. Today your trip to the store and back took 1 hour. What was the speed of the wind today?