

NAME: _____ Score _____/10
Please **print** your name

1. T **F** If both sides of an equation are multiplied by the same thing, the resulting equation is equivalent to the original equation.

2. Simplify $\frac{\frac{2}{x} + \frac{1}{x^2}}{\frac{y}{x^2}} = \frac{\frac{2x}{x^2} + \frac{1}{x^2}}{\frac{y}{x^2}} = \frac{2x+1}{x^2} = \left(\frac{2x+1}{x^2}\right)\left(\frac{x^2}{y}\right) = \frac{2x+1}{y}$

3. Simplify $\frac{x^{-1} + 1}{x^{-1} - 1} = \frac{\frac{1}{x} + 1}{\frac{1}{x} - 1} = \frac{\frac{1}{x} + \frac{x}{x}}{\frac{1}{x} - \frac{x}{x}} = \frac{1+x}{1-x} = \left(\frac{1+x}{x}\right)\left(\frac{x}{1-x}\right) = \frac{1+x}{1-x}$

4. You are to read the work I have done and then complete the Problem: Solve $\frac{x+6}{x-2} = \frac{2(x+2)}{x-2}$.

Solution: Multiply both sides of the equation by $x - 2$ to obtain

$$x + 6 = 2(x + 2)$$

$$x + 6 = 2x + 4 \quad \text{Add } -x - 4 \text{ to both sides to obtain}$$

$$2 = x \quad \text{You must finish the problem.}$$

Because 2 causes a zero in a denominator of the original equation, 2 is not a solution of the original equation.

Because 2 is the only possible solution of the original equation, there is no solution to the original equation.

Therefore the solution set for the original equation is the empty set \emptyset .