

Name \_\_\_\_\_ Simplifying Rational Expressions 8-22-17 Hour 1 2 3 4 5 6 7

Rational Expression Simplification Simplify each of the following expressions (no negative exponents or complex fractions allowed)

<p>Question 1</p> $\frac{7x-13}{2x-1} + \frac{x+9}{2x-1}$	<p>Question 2</p> $x^2 + \frac{2x}{3x-5}$	<p>Question 3</p> $\frac{x-y}{x^{-1}-y^{-1}}$
<p>Question 4</p> $\frac{1-xy^{-1}}{x^{-1}-y^{-1}}$	<p>Question 5</p> $\frac{2x}{x+3} - \frac{x-3}{x^2+6x+9}$	<p>Question 6</p> $\frac{x+2}{2x-1} - \frac{2x}{x-1}$

Question 7

$$\frac{2x+10}{x-1} - \frac{4}{\frac{x+5}{x^2-1} - \frac{1}{x+1}}$$

Question 8

$$\frac{x+2}{x+5} + \frac{1}{\frac{x-1}{x+5} - \frac{1}{x+1}}$$

Question 9

$$\frac{7x}{x^2-1} - \frac{x}{x^2-1} + \frac{6}{x^2-1}$$

Question 10

$$\frac{3x}{2x-y} - \frac{2x}{2x+y} + \frac{2y^2}{4x^2-y^2}$$

Question 11

$$(x-y)^{-2} - (x+y)^{-2}$$

Question 12

$$\frac{7}{x+7} - \frac{x}{x-7} + \frac{2x}{x^2-49}$$

## Solutions to 8-22-17 Assignment

1) 
$$\frac{7x-13}{2x-1} + \frac{x+9}{2x-1} = 4$$

2) 
$$x^2 + \frac{2x}{3x-5} = \frac{3x^3 - 5x^2 + 2x}{3x-5}$$

3) 
$$\frac{x-y}{x^{-1}-y^{-1}} = -xy$$

4) 
$$\frac{1-xy^{-1}}{x^{-1}-y^{-1}} = x$$

5) 
$$\frac{2x}{x+3} - \frac{x-3}{x^2+6x+9} = \frac{2x^2+5x+3}{x^2+6x+9}$$

6) 
$$\frac{x+2}{2x-1} - \frac{2x}{x-1} = \frac{-3x^2+3x-2}{2x^2-3x+1}$$

7) 
$$\frac{\frac{2x+10}{x-1}}{\frac{x+5}{x^2-1}} - \frac{4}{x+1} = \frac{2x^2+4x-2}{x+1}$$

8) 
$$\frac{\frac{x+2}{x-1}}{\frac{x+5}{x+1}} + \frac{1}{x+1} = \frac{x^2+4x+1}{x^2-1}$$

9) 
$$\frac{7x}{x^2-1} - \frac{x}{x^2-1} + \frac{6}{x^2-1} = \frac{6}{x-1}$$

10) 
$$\frac{3x}{2x-y} - \frac{2x}{2x+y} + \frac{2y^2}{4x^2-y^2} = \frac{x+2y}{2x-y}$$

11) 
$$(x-y)^{-2} - (x+y)^{-2} = \frac{x^2+2xy-x+y+y^2}{x^3+x^2y-xy^2-y^3}$$

12) 
$$\frac{7}{x+7} - \frac{x}{x-7} + \frac{2x}{x^2-49} = \frac{-x^2+2x-49}{x^2-49}$$

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