**MAT 150 Case 5 Assignment and Template**

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**Name:**

**Date:**

**Instructor:**

Use this template to insert your answers for the assignment. Please use one of the four methods for showing your work (EE, Math Type, ALT keys, or neatly typed). Remember that your work should be clear and legible.

Problems need to include all required steps and answer(s) for full credit. All answers need to be reduced to lowest terms where possible.

Simplify each rational expression.

1. $\frac{(x^{2}-4)}{4x-8}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. $\frac{(x+2)}{x^{2}+5x+6}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. $\frac{(3x^{2}+12x+9)}{x+3}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. $\frac{x^{2}-4}{3x}$ \* $\frac{6x}{7x-5}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. $\frac{3x^{2}-6x}{4x-1}$ \* $\frac{4x+1}{9x}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. $\frac{6x-8}{5x}$ $÷$ $\frac{3x+1}{12x}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. $\frac{8y^{2}}{x^{2}-9}$ $÷$ $\frac{-6y}{x-3}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. $\frac{7x}{2x-1}$ $+$ $\frac{5x-2}{2x+2}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Simplify the rational expressions. Include any restrictions on the variable.

9. $\frac{x^{2}}{x-4}$ $-$ $\frac{16}{x-4}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. $\frac{4}{3y}$ $+\frac{2y}{5}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. $\frac{8}{x-1}$ $-$ $\frac{14}{x+3}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. $\frac{8}{9}$ $-$ $\frac{4}{2x-6}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solve each equation.

13. $\frac{3x}{5}$ $+ 4 =12$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. $\frac{1}{2}$ $+ \frac{27}{6x} =2$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. $\frac{x+4}{3}$ $=$ $\frac{6x}{-6}$

**Calculations**:

**Answer**: ­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_