

Problems 10-15

10. Simplify the sum of rational expressions. Simplify the result. Assume the denominator is not equal to zero. \rightarrow write the values that make denominator = 0, for $x \neq$

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

2. $\frac{x^2 - 5x}{x^2 - 4x + 4} - \frac{4x^2}{x - 2}$ for $x \neq$

3. $\frac{x^2 - 16}{(x - 4)^2} - \frac{x^2 - 3x - 2}{x^2 - 2x - 24}$

4. $\frac{2x^2 - 6x - 2}{x^2 + 3x - 10} - \frac{2x^2 - 2x + 15}{x^2 - 6x + 9}$

5. $\frac{x^2 - x - 6}{x^2 - x - 20} + \frac{x^2 + 6x + 8}{x^2 - x - 6}$

6. $\frac{x^2 - x - 30}{x^2 - 2x - 24} + \frac{x^2 + 11x + 24}{x^2 - 2x - 24}$

7. $\frac{15 - 5x}{x^2 - 4x} + \frac{5x}{x^2 + 6x + 8}$

8. $\frac{17x + 119}{x^2 - 5x - 14} + \frac{9x + 4}{x^2 - 5x + 2}$

9. $\frac{2x^2 - 5x - 3}{3x^2 - 10x + 3} + \frac{9x^2 - 1}{4x^2 + 4x + 1}$

10. $\frac{x^2 - 1}{x^2 - 6x - 7} + \frac{x^3 + x^2 - 2x}{x^2 - 7}$

11. $\frac{3x - 21}{x^2 - 10} + \frac{3x + 1}{x^2 - 4}$

12. $\frac{x^2 - 4}{x^2 - 9} + \frac{1}{x - 3}$

13. $\frac{x^2 - 4}{w^2 - y^2} + \frac{2w + 1}{1 - y}$

14. $\frac{y^2 - y + 12}{y + 2} + \frac{y^2 - 4y - 12}{y^2 - 4y - 12}$

15. $\frac{x^2 + 7x + 10}{x + 2} + \frac{x^2 + 2x - 15}{x + 2}$