

WS **OPTIONAL** Extra Practice – Simplifying & Solving

Simplify.

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

9. $\frac{1}{x-y} + \frac{2x-y}{x^2-y^2}$

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

10. $\frac{2}{x-4} - \frac{x+12}{x^2-16}$

3. $(x^2-5x-14) \cdot \frac{x+3}{x^2-4x-21}$

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

4. $\frac{x^3+8}{x-2} \cdot \frac{x^2-4x+4}{x^2-2x+4}$

12. $\frac{16-x^2}{x^2-4} + \frac{2x+3}{2-x} + \frac{3x-2}{x+2}$

5. $\frac{x^2-7x+12}{x^2-x-6} \div \frac{x^2-16}{x^2+x-2}$

13. $\frac{3}{x^2+x-2} - \frac{5}{x^2-x-6}$

6. $(x^2-x-72) \div \frac{x-9}{x+8}$

14. $\frac{3x+13}{x^2-3x-10} - \frac{16}{x^2-6x+5}$

7. $\frac{x^4-27x}{x^2-9} \div \frac{x^2+3x+9}{x+3}$

15. $\frac{6}{x^2-7x+12} + \frac{5x+9}{x^2-2x-3}$

8. $\frac{x^2-6x+8}{x^2-5x+6} \div \frac{x^2-7x+12}{x^2-4x+4}$

16. $\frac{x+4}{x^2-3x-28} - \frac{x-5}{x^2+2x-35}$

Solve.

$$17. \frac{x}{x-3} - \frac{7}{x+5} = \frac{24}{x^2+2x-15}$$

$$18. \frac{x}{x+2} + \frac{7}{x-5} = \frac{14}{x^2-3x-10}$$

$$19. \frac{3x}{x+4} + \frac{4x}{x-3} = \frac{84}{x^2+x-12}$$

$$20. \frac{x}{x+4} + \frac{4}{x-4} = \frac{x^2+16}{x^2-16}$$

$$21. \frac{x+3}{2x-3} = \frac{18x}{4x^2-9}$$

$$22. \frac{4x}{x^2-9} - \frac{x-1}{x^2-6x+9} = \frac{2}{x+3}$$

$$23. \frac{x}{x^2-2x+1} = \frac{2}{x+1} + \frac{4}{x^2-1}$$

$$24. \frac{3x}{x-2} + \frac{2x}{x+3} = \frac{30}{x^2+x-6}$$

$$25. \frac{5}{x-6} - \frac{4}{x+3} = \frac{x+39}{x^2-3x-18}$$

$$26. \frac{5x}{x-5} + \frac{4}{x+6} = \frac{54x+5}{x^2+x-30}$$