Rational Expressions Two – Addition and Subtraction

1. $\frac{5xy}{x^2-y^2}-\frac{x-y}{x+y}=\frac{-(x^2-7xy+y^2)}{(x+y)(x-y)}$

2. $\frac{3x}{x^2-7x+10}-\frac{2x}{x^2-8x+15}=\frac{x}{(x-2)(x-3)}$

3. $\frac{x}{x^2-x-20}+\frac{2}{x+4}=\frac{(3x-10)}{(y-5)(y+4)}$

4. $\frac{3x+2}{x^2+5x-24}+\frac{7}{x^2+4x-32}=\frac{(3x^2-3x-39)}{(x-3)(x+8)(x-4)}$

5. $\frac{1}{x+1}-\frac{x}{x-2}+\frac{x^2+2}{x^2-x-2}=0$

6. $\frac{3x-1}{x^2+2x-3}-\frac{x-4}{x^2-9}=\frac{(2x^2-13x+7)}{(x+3)(x-1)(x-3)}$

7. $\frac{4x}{x^2-1}+\frac{3x}{1-x}-\frac{4}{x-1}=\frac{-(3x^2+3x+4)}{(x-1)(x+1)}$

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

9. $\frac{y}{y+3}+\frac{6y}{y^2-9}=\frac{y}{(y-3)}$

10. $\frac{x^2+3x+3}{x^2+5x+6}+\frac{4}{x+3}=\frac{(x^2+7x+11)}{(x+3)(x+2)}$

11. $\frac{y^2+4y-5}{y^2-2y-3}-\frac{2}{y+1}=\frac{(y+1)}{(y-3)}$

12. $\frac{2x}{3x-15}+\frac{20-16x}{3x^2-12x-15}=\frac{2(x-2)}{3(x+1)}$

13. $\frac{x}{2x-2}-\frac{2x+3}{2x^2+6x+8}=\frac{(x+3)}{2(x+4)}$

14. $\frac{x}{x+1}-\frac{2}{x^2+2x+1}=\frac{(x+2)(x-1)}{(x+1)^2}$

15. $\frac{3}{x^2-4x+4}+\frac{5}{x+2}=\frac{(5x-7)}{(x+2)^2}$

16. $x+1-\frac{5}{1-x}=\frac{(x^2+4)}{(x-1)}$

17. $3y+1+\frac{2}{3y-1}=\frac{(9y^2+1)}{(3y-1)}$

18. $\frac{x}{x-y}-\frac{x^2+y^2}{y^2-x^2}+\frac{y}{x+y}=\frac{2x}{x-y}$

19. $\frac{x^2+y^2}{y^2-x^2}+\frac{y}{y+x}-\frac{x}{y-x}=\frac{2y}{(y+x)}$

20. $\frac{6xy}{x^2-y^2}-\frac{x+y}{x-y}=\frac{-(x^2-4xy+y^2)}{(x-y)(x+y)}$

21. $\frac{6}{y^2+6y+9}+\frac{5}{y^2-9}=\frac{(11y-3)}{(y+3)^2(y-3)}$

22. $\frac{5x}{x^2-6x+8}-\frac{3x}{x^2-x-12}=\frac{x(2x+21)}{(x-2)(x-4)(x+3)}$

23. $\frac{2}{x+3}-\frac{x}{x-1}+\frac{x^2+2}{x^2+2x-3}=\frac{-x}{(x+3)(x-1)}$

24. $\frac{3x-2}{x^2+2x-24}-\frac{x-3}{x^2-16}=\frac{(2x^2+7x+10)}{(x-4)(x+4)(x+6)}$