Adding Rational Expressions

No Calculator

Simplify Each of the Following:

1. $\frac{1}{x+9}+\frac{1}{(x-9)}$
2. $\frac{1}{x+5}+\frac{1}{(x-3)}$
3. $\frac{1}{x+1}+\frac{1}{(x+2)}$
4. $\frac{1}{x-1}+\frac{1}{(x-9)}$
5. $\frac{1}{x-6}+\frac{1}{(x-3)}$
6. $\frac{1}{x-4}+\frac{1}{(x-7)}$
7. $\frac{1}{x+5}+\frac{1}{(x-8)}$
8. $\frac{1}{x-2}+\frac{1}{(x-2)}$
9. $\frac{1}{x+1}+\frac{1}{(x-4)}$
10. $\frac{1}{x+3}+\frac{1}{(x+2)}$
11. $\frac{1}{x+9}+\frac{1}{(x-1)}$
12. $\frac{1}{x+4}+\frac{1}{(x-4)}$
13. $\frac{1}{x-1}+\frac{1}{(x-7)}$
14. $\frac{1}{x-3}+\frac{1}{(x+9)}$
15. $\frac{1}{x-2}+\frac{1}{(x-9)}$
16. $\frac{1}{x-2}+\frac{1}{(x+5)}$
17. $\frac{1}{x+4}+\frac{1}{(x-7)}$

Answers

1. $\frac{2x}{x^2-81}$
2. $\frac{2x+2}{x^2+2x-15}$
3. $\frac{2x+3}{x^2+3x+2}$
4. $\frac{2x-10}{x^2-10x+9}$
5. $\frac{2x-9}{x^2-9x+18}$
6. $\frac{2x-11}{x^2-11x+28}$
7. $\frac{2x-3}{x^2-3x-40}$
8. $\frac{2x-4}{x^2-4x+4}$
9. $\frac{2x-3}{x^2-3x-4}$
10. $\frac{2x+5}{x^2+5x+6}$
11. $\frac{2x+8}{x^2+8x-9}$
12. $\frac{2x}{x^2-16}$
13. $\frac{2x-8}{x^2-8x+7}$
14. $\frac{2x+6}{x^2+6x-27}$
15. $\frac{2x-11}{x^2-11x+18}$
16. $\frac{2x+3}{x^2+3x-10}$
17. $\frac{2x-3}{x^2-3x-28}$