Precalculus
7.3 Partial Fractions Name_____

Decompose into partial fractions using the method for Case I: All linear factors.

1. $-\dfrac{5x-4}{(x+1)(x-2)}$

2. $\dfrac{3x+7}{2x^2-9x-5}$

3. $\dfrac{x-1}{x^2+6x+8}$

4. $\dfrac{3x+20}{x^2+4x}$

5. $\dfrac{5x-1}{x^3-x}$

6. $\dfrac{3x^2+21x-84}{(x-2)(x+3)(x-5)}$

Decompose into partial fractions using the method for Case II: Quadratic factors that are not factorable.

7. $\dfrac{2x^2-11x+5}{(x-3)(x^2+2x-5)}$

8. $\dfrac{4x^2+5x+8}{(x^2-5)(x+2)}$

9. $\dfrac{13x}{(3x^2-2)(2x^2+3)}$

Decompose into partial fractions using the method for Case III: Linear or Quadratic factors that repeat.

10. $\dfrac{9}{(x-1)(x+2)^2}$

11. $\dfrac{4x^2-11x+12}{x^2(x-4)}$

12. $\dfrac{8x^3+13x}{(x^2+2)^2}$

Decompose into partial fractions using the method for Case IV: Quotients with degree of the numerator greater than or equal to the degree of the denominator.

13. $\dfrac{2x^2+x+3}{x^2-9}$

14. $\dfrac{2x^3+x^2-7x+7}{x^2+x-2}$

Decompose into partial fractions using an appropriate method.

15. $\dfrac{8x^2-x-4}{(2x^2-x-1)(x^2+x+1)}$

16. $\dfrac{3x-26}{x^2-x-12}$

17. $\dfrac{x-4}{x^2-2x-3}$

18. $\dfrac{x^2-10x+13}{(x-1)(x^2-5x+6)}$

19. $\dfrac{5x^3-6x^2-15x+5}{x^2(x^2-5)}$

20. $\dfrac{x^2-3x}{(x-4)(x-2)^2}$