

Partial Fractions

4-11-08

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$$2. \frac{Ax+B}{x^2+x+1} + \frac{Cx+D}{(x^2+x+1)^2} + \frac{Ex+F}{x^2-x+1}$$

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

$$10. \frac{-3x+7}{x^2+4} + \frac{8x-17}{x^2+9}$$

$$14. \frac{1}{x+3} + \frac{-1}{x+7}$$

$$18. \frac{-2}{x-3} + \frac{2}{x}$$

$$22. \frac{3}{x+1} - \frac{2}{2x-3}$$

$$26. \frac{\frac{7}{3}}{(x-3)^2} + \frac{-\frac{25}{9}}{x-3} + \frac{\frac{25}{9}}{x}$$

$$30. \frac{3x}{x^2+2} + \frac{-1}{(x^2+2)^2}$$

$$34. 3 + \frac{4}{x-2} + \frac{-2}{x+2}$$

8. Use inverse matrices to find the partial fraction decomposition.

$$\frac{4x+4}{x^2(x+2)} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{(x+2)}$$

12. Use the reduced row echelon form for the augmented matrix to find the partial fraction decomposition.

$$\frac{-x^3 - 6x^2 - 5x + 87}{(x-1)^2(x+4)^2} = \frac{A}{(x-1)} + \frac{B}{(x-1)^2} + \frac{C}{(x+4)} + \frac{D}{(x+4)^2}$$

16. Find the partial fraction decomposition. Confirm your answer algebraically by combining the partial fractions.

$$\frac{6}{x^2 - 9}$$