

## Partial Fraction Decomposition

**Find the partial fraction decomposition of each.**

1)  $\frac{-5x + 4}{x^2 - x}$

2)  $\frac{3x + 10}{x^2 + 9x + 20}$

3)  $\frac{-2x^2 + 4x + 14}{x^2 - 6x + 5}$

4)  $\frac{2x^2 - 9x - 10}{x^2 - 5x}$

5)  $\frac{-7x - 15}{x^2 + 6x + 9}$

6)  $\frac{-2x^2 + 19x - 13}{x^3 - 7x^2 + 11x - 5}$

7)  $\frac{-6x^2 + 3x + 5}{x^3 - x}$

8)  $\frac{20x + 9}{25x^2 + 20x + 4}$

9)  $\frac{-4x^4 - 26x^2 - 2x^3 - 8x - 44}{(x + 1)(x^2 + 3)^2}$

10)  $\frac{-2x^3 + 36x^2 - 199x + 375}{x(x - 5)^3}$

11)  $\frac{15x^2 - 11x - 5}{x(x + 1)(2x - 5)}$

12)  $\frac{2x^4 - 8x^2 - 10 + 3x^3 - 9x}{x(x^2 + 1)(x^2 - 5)}$

## Partial Fraction Decomposition

Find the partial fraction decomposition of each.

1)  $\frac{-5x+4}{x^2-x}$

$$-\frac{4}{x} - \frac{1}{x-1}$$

2)  $\frac{3x+10}{x^2+9x+20}$

$$-\frac{2}{x+4} + \frac{5}{x+5}$$

3)  $\frac{-2x^2+4x+14}{x^2-6x+5}$

$$-2 - \frac{4}{x-5} - \frac{4}{x-1}$$

4)  $\frac{2x^2-9x-10}{x^2-5x}$

$$2 + \frac{2}{x} - \frac{1}{x-5}$$

5)  $\frac{-7x-15}{x^2+6x+9}$

$$-\frac{7}{x+3} + \frac{6}{(x+3)^2}$$

6)  $\frac{-2x^2+19x-13}{x^3-7x^2+11x-5}$

$$\frac{2}{x-5} - \frac{4}{x-1} - \frac{1}{(x-1)^2}$$

7)  $\frac{-6x^2+3x+5}{x^3-x}$

$$-\frac{5}{x} - \frac{2}{x+1} + \frac{1}{x-1}$$

8)  $\frac{20x+9}{25x^2+20x+4}$

$$\frac{4}{5x+2} + \frac{1}{(5x+2)^2}$$

9)  $\frac{-4x^4-26x^2-2x^3-8x-44}{(x+1)(x^2+3)^2}$

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

10)  $\frac{-2x^3+36x^2-199x+375}{x(x-5)^3}$

$$-\frac{3}{x} + \frac{1}{x-5} + \frac{1}{(x-5)^2} + \frac{6}{(x-5)^3}$$

11)  $\frac{15x^2-11x-5}{x(x+1)(2x-5)}$

$$\frac{1}{x} + \frac{3}{x+1} + \frac{7}{2x-5}$$

12)  $\frac{2x^4-8x^2-10+3x^3-9x}{x(x^2+1)(x^2-5)}$

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