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