Name_____

Partial Fraction Decomposition

Date_____ Period_____

Find the partial fraction decomposition of each.

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

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

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

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

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

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

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

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

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

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

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

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

Partial Fraction Decomposition

Find the partial fraction decomposition of each.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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