Name: _____

Partial Decomposition

Decompose the following rational function into partial fractions:

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

2) $R(x) = \dfrac{x+3}{x^2-16}$

3) $R(x) = \dfrac{x+4}{x^2+7x+12}$

4) $R(x) = \dfrac{3}{x^2-9}$

5) $R(x) = \dfrac{x-8}{x^2+9x+20}$

6) $R(x) = \dfrac{x+5}{x^2+4x+3}$

7) $R(x) = \dfrac{x+2}{x^2+16x+64}$

8) $R(x) = \dfrac{x}{x^2-25}$

9) $R(x) = \dfrac{3}{x^2-121}$

10) $R(x) = \dfrac{6x-5}{x^2-225}$

11) $R(x) = \dfrac{-9}{x^2-100}$

12) $R(x) = \dfrac{-2x-3}{(x-1)^2}$

13) $R(x) = \dfrac{4x+3}{\left(x^2+x+1\right)^2}$

14) $R(x) = \dfrac{x+6}{(x-3)^2}$

15) $R(x) = \dfrac{2x+7}{\left(x^2+5\right)^2}$

16) $R(x) = \dfrac{11-3x}{(x-7)^2}$

Identify the partial fractions corresponding to the rational expressions

1) $R(x) = \dfrac{4x^4-8x^2+2x-3}{(3x-2)^2\left(x^2+3x+1\right)^3}$

2) $R(x) = \dfrac{4x^4-2x^3+5x^2+2x+11}{(x+8)^2\left(x^2+3x+10\right)^2}$

3) $R(x) = \dfrac{5x^3-6x^2+x-4}{(3-x)^5\left(x^2+7x+9\right)^4}$

4) $R(x) = \dfrac{8x^2+2x+13}{(x-6)^4\left(x^2+3x+5\right)^6}$