

- i. Show all relevant work. No work, no credit.
- ii. Write your answers in the spaces provided on the right.
- iii. Staple when you turn in the assignment.
- iv. Due Wednesday, November 12 at the beginning of the class.

Write the partial fraction decomposition of the rational expression.

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

2) $\frac{x^2 - 111}{x^4 - x^2 - 72}$

Solve the system of equations. If the equations are dependent, write the solution in parametric form.

$$3) \begin{cases} x + y + z = 4 \\ x - y + 4z = 25 \\ 2x + y + z = 6 \end{cases}$$

$$4) \begin{cases} 4x - 7y - z = 21 \\ x - 3y - 5z = -15 \\ 9x + y + z = 77 \end{cases}$$

$$5) \begin{cases} -x + y + 2z = 0 \\ x + 2y + z = 6 \\ -2x - y + z = -6 \end{cases}$$