Test 4 Winter 2002 MAT 191 Name_____

Simplify all answers and show your work!

Use Cramer's Rule to determine the following determinants for the given system of equations. $\begin{cases} 2x - y + z = 9 \\ x + 2y - z = -4 \\ -3x + y + 2z = 1 \end{cases}$ Set up the determinants only. Do not solve the determinants.

1. Find D_x

2. Find D

3. Find D_z

Factor.

4. $x^2 - x - 20$

5. $x^2 + 12x + 36$

6. $7x^2 + 8x + 1$

7. $x^2 - 81$

8. $x^3 + 8$

9. $6x^2 + 17x - 3$

10. $4x^2 + 12xy + 5y^2$

11. Solve for x: $4x^2 - 5x - 6 = 0$

12. Solve for x: $x^2 - 8x + 16 = 0$

13. Solve for x: $x^2 - 12x + 27 = 0$

14. Simplify: $\dfrac{6y^2 + y}{3y^2 + y}$

15. Multiply: $\dfrac{5t + 25}{10} \bullet \dfrac{12}{6t + 30}$

16. Divide: $\dfrac{a^2 - 16}{a + 3} \div \dfrac{a - 4}{a^2 - 9}$