Name:_____

Algebra 2
Unit 4 Test Review

1. $\begin{bmatrix} \$40 & \$13 \\ \$18 & \$14 \\ \$30 & \$12 \end{bmatrix}$ What are the dimensions of this matrix?

2. What are the dimensions of the matrix $\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$

3. How many elements are there in a 2 x 3 matrix?

For problems 4 – 6, use the following matrices. $A = \begin{bmatrix} 2 & 3 & -1 \\ 0 & 7 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 3 & 9 \\ 6 & 2 & -4 \end{bmatrix}$

4. Find A + B

5. Find B – A

6. Find AB

7. Find $\det \begin{bmatrix} 1 & 2 \\ 9 & 0 \end{bmatrix}$.

8. $Q = \begin{bmatrix} 0 & 4 \\ 2 & 1 \end{bmatrix}$ and $R = \begin{bmatrix} 2 & -1 & 1 \\ 2 & -2 & 8 \end{bmatrix}$ Find QR.

9. Solve the matrix equation for x. $\begin{bmatrix} 5 & x \\ y & 7 \end{bmatrix} = \begin{bmatrix} 5 & 1 \\ 6 & z \end{bmatrix}$

10. Solve the matrix equation in #9 for y.

11. If $A \cdot B = \begin{bmatrix} 3 & 2 & 9 & 7 \\ 5 & 1 & 0 & 6 \end{bmatrix}$ and A is a 2 x 3 matrix, what are the dimensions of B?

12. Evaluate $\begin{bmatrix} 2 & -1 \\ 9 & 2 \end{bmatrix}\begin{bmatrix} 2 \\ 1 \end{bmatrix}$

13. Find the determinant of $\begin{bmatrix} -1 & 2 \\ -3 & -4 \end{bmatrix}$

14. Let A $=\begin{bmatrix} 1 & 3 \\ 5 & 7 \end{bmatrix}$. Which of the following is A^{-1}?

15. Find the inverse of A$=\begin{bmatrix} -2 & 1 \\ -2 & -1 \end{bmatrix}$

16. Find the inverse of the following matrix $\begin{bmatrix} 2 & -5 \\ 1 & 1 \end{bmatrix}$

17. What is the solution to the system
$$2x + 5y = 6$$
$$10x - 10y = 30$$

18. Identify the 2 x 2 and 3 x 3 identity matrix.

19. Solve the following system of equations
$$4a + 5b + 5c = -19$$
$$3a + 2b - 4c = -4$$
$$-5a - 2b - c = 26$$

20. Solve the following system of equations
$$-3x - 5y - z = 7$$
$$5x + 4y + 2z = -5$$
$$-3x - y - 2z = 5$$