

MAT 150 – Homework 19  
Sections 6.1 and 6.2

NAME \_\_\_\_\_

Directions: Show all work and write your final answer in the space provided.

1. Solve by Substitution:  $x + 3y = 5$   
 $2x - 3y = -8$  1. \_\_\_\_\_
2. Solve by Elimination:  $5x - 2y = 3$   
 $6x + 4y = -7$  2. \_\_\_\_\_
3. Solve by Elimination:  $x + y - z = 6$   
 $3x - 2y + z = -5$   
 $x + 3y - 2z = 14$  3. \_\_\_\_\_
4. Solve by Elimination:  $x - y = 5$   
 $-3x + 3y = 2$  4. \_\_\_\_\_
5. Solve using a Matrix:  $x - y + z = -4$   
 $2x - 3y + 4z = -15$   
 $5x + y - 2z = 12$  5. \_\_\_\_\_
6. Solve by Substitution:  $2x - 3y = -1$   
 $10x + y = 11$  6. \_\_\_\_\_
7. Solve by Elimination:  $\frac{1}{3}x - \frac{3}{2}y = -5$   
 $\frac{3}{4}x + \frac{1}{3}y = 11$  7. \_\_\_\_\_
8. Solve using a Matrix:  $2x - 4y = -2$   
 $3x + 2y = 3$  8. \_\_\_\_\_

$$x + 2y - z = -3$$

$$2x - 4y + z = -7$$

9. Solve by Elimination:  $-2x + 2y - 3z = 4$

9. \_\_\_\_\_

$$x - 2y + z = 12$$

$$2x + 3y - 3z = -17$$

10. Solve using a Matrix:  $-3x + y - 2z = -17$

10. \_\_\_\_\_

11. Four cheeseburgers and two shakes cost a total of \$7.90. Two shakes cost \$0.15 more than one cheeseburger. What is the cost of a cheeseburger?

11. \_\_\_\_\_

$$x - 2y + 3z = 1$$

$$x + 2y - z = 13$$

12. Solve:  $3x + 2y - 5z = 3$

12. \_\_\_\_\_

$$x - y + 2z = 2$$

$$3x + y + 5z = 8$$

13. Solve:  $2x - y - 2z = -7$

13. \_\_\_\_\_

14. Find real numbers  $a$ ,  $b$ , and  $c$  so that the graph of the function  $y = ax^2 + bx + c$  contains the points  $(-1, -2)$ ,  $(1, -4)$ , and  $(2, 4)$ .

14. \_\_\_\_\_

$$x - y - z = 1$$

$$-x + 2y - 3z = -4$$

15. Solve:  $3x - 2y - 7z = 0$

15. \_\_\_\_\_