Math 1201 Final Exam Review

Linear Systems

1. Which system has exactly one solution?
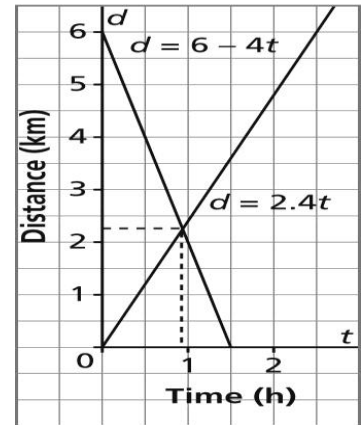
    A. $y = -4x - 2$
       $y = -4x + 5$

    B. $6x - 3y = -1$
       $-2x + y = 4$

    C. $\dfrac{1}{3}x + \dfrac{1}{2}y = 2$

       $\dfrac{1}{6}x + y = \dfrac{5}{2}$

    D. $y = 3x - 2$

       $y = 3x + 2$

2. What is the solution to the system graphed?

3. What is the solution to the system of equations $\begin{vmatrix} y = 2x - 1 \\ y = -x + 5 \end{vmatrix}$

4. In which system of equations are the equations parallel?

    A. $\begin{cases} 2x - y = 3 \\ x + 2y = 3 \end{cases}$
    B. $\begin{cases} x - y = 10 \\ x + y = 10 \end{cases}$
    C. $\begin{cases} 2x + 3y = 5 \\ 6x + 9y = 1 \end{cases}$
    D. $\begin{cases} y = 3x - 1 \\ y = -3x + 2 \end{cases}$

5. Solve each linear system algebraically.

    a) $-3x - 6y = 9$
        $2x + 2y = -4$

    b) $3x - 4y = 13$
        $5x + 3y = 12$

    c) $\dfrac{1}{2}x - \dfrac{1}{3}y = \dfrac{5}{12}$

        $\dfrac{5}{6}x + \dfrac{1}{2}y = \dfrac{1}{6}$

6. a) Write a linear system to model this situation:
    Every time Joe goes to the cafeteria he buys a soup for $1.75 or pizza for $4.75.
    During the year he spent $490 and bought 160 food items.

    b) How many of each item did he buy? Solve this problem algebraically.

7. Solve the system by graphing.

$2x + y = -3$

$3x - 2y = 2$