

3 Chapter 3 Mid-Chapter Test

(Lessons 3-1 through 3-4)

Part I Write the letter for the correct answer in the blank at the right of each question.

1. Choose the correct description of the system of equations.

$$\begin{aligned} 3x - y &= 5 \\ 6x &= 2y + 5 \end{aligned}$$

- A consistent and independent C inconsistent
 B consistent and dependent D inconsistent and dependent 1. C

2. Solve $3x + 2y = 7$ and $x - 4y = -21$ by using substitution.

- F (3, -1) G $(\frac{7}{3}, \frac{7}{2})$ H (-1, 5) J (1, 5) 2. H

Solve each system of equations by using elimination.

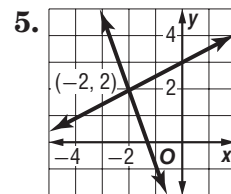
3. $2x + y = 2$ A (-1, 4) C (1, 4)
 $3x - 2y = -11$ B $(9, \frac{18}{5})$ D (-3, 1) 3. A

4. $3x - 5y = 14$ F (3, -1) H (8, 2)
 $2x + 3y = 3$ G (0, 1) J (6, -3) 4. F

Part II

5. Solve the system of equations by graphing.

$$\begin{aligned} 3x + y &= -4 \\ x - 2y &= -6 \end{aligned}$$



Use the system of inequalities $x \geq -2$, $x + y \leq 7$, and $y \geq 2x + 1$.

6. Find the coordinates of the vertices of the feasible region.

- $(-2, -3), (-2, 9),$
 $(2, 5)$
 6. _____

7. Find the maximum and minimum values of the function $f(x, y) = 3x - y$ for the feasible region.

- max: $f(2, 5) = 1;$
 7. min: $f(-2, 9) = -15$

Solve each system of equations.

8. $x + 2y - 3z = 5$
 $x - y + 2z = -3$
 $x + y - z = 2$ 8. (0, 1, -1)

9. $3x + y + 2z = 1$
 $2x - y + z = -3$
 $x + y - 4z = -3$ 9. (-1, 2, 1)