

**Algebra 1**  
**Practice Chapter 6 Test**

NAME KEY

Write the letter for the best answer in the blank at the right. (4 Points)

1. What kind of system of equations is  $5y = 3x - 10$  and  $-3x + 5y = 15$ .

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

$y = \frac{3}{5}x - 2$       $5y = 3x + 15$   
 $y = \frac{3}{5}x + 3$

2. What kind of system of equations is  $\frac{2y}{2} = \frac{3x}{2} - 12$  and  $4x - 2y = 8$ .

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

$y = \frac{3}{2}x - 6$       $-2y = -4x + 8$   
 $y = 2x - 4$

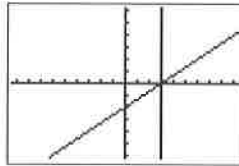
3. What kind of system of equations is  $2x + 4y = 8$  and  $4x + 8y = 16$ .

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

$4y = -2x + 8$       $8y = -4x + 16$   
 $y = -\frac{1}{2}x + 2$       $y = -\frac{1}{2}x + 2$

4. State the solution of the system of equations graphed below.

- A. (3, 0)     B. (-3, 0)     C. (0, 3)     D. (0, -3)



3. \_\_\_\_\_

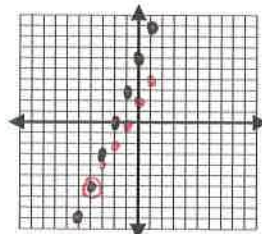
4. \_\_\_\_\_

Solve #5 - #8 by Graphing (show work)

5.  $-6x + 3y = 6$  and  $2y = 6x + 12$

- A. (-4, -6)     B. (0, 6)     C. (3, 8)     D. (1, -7)

$3y = 6x + 6$       $y = 3x + 6$   
 $y = 2x + 2$



5. \_\_\_\_\_

6. \_\_\_\_\_

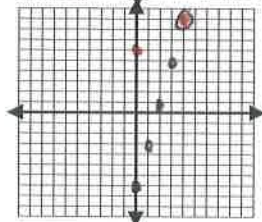
7. \_\_\_\_\_

8. \_\_\_\_\_

6.  $-3x + 4y = 24$  and  $4x - y = 7$

- A. (3, 1)     B. (-1, 5)     C. (4, 9)     D.  $\emptyset$

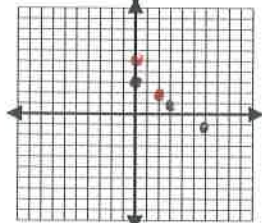
$4y = 3x + 24$       $-y = -4x + 7$   
 $y = \frac{3}{4}x + 6$       $y = 4x - 7$



7.  $3x + 2y = 10$  and  $2x + 3y = 10$

- A. (6, 1)     B. (2, 2)     C. (1, 4)     D.  $\emptyset$

$2y = -3x + 10$       $3y = -2x + 10$   
 $y = -\frac{3}{2}x + 5$       $y = -\frac{2}{3}x + \frac{10}{3}$

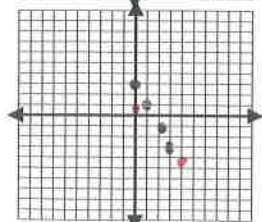


Points(32) \_\_\_\_\_

8.  $5x + 4y = 3$  and  $y = -2x + 3$

- A. (3, -3)     B. (2, -2)     C.  $\mathcal{R}$      D.  $\emptyset$

$4y = -5x + 3$   
 $y = -\frac{5}{4}x + \frac{3}{4}$



Solve #9 - #14 by Substitution (show work)

9.  $y = 5x + 1$  and  $4x + y = 10$   
 Handwritten work:  $4x + 5x + 1 = 10$   
 $9x = 9$   
 $x = 1$   
 A. (1, 6) B. (-1, 14) C. (2, 5) D. (-2, 18)

10.  $3x - y = 2$  and  $-4x + 2y = -10$   
 Handwritten work:  $-4x + 2(3x - 2) = -10$   
 $-4x + 6x - 4 = -10$   
 $2x - 4 = -10$   
 $2x = -6$   
 $x = -3$   
 A. (3, 7) B. ( $\frac{2}{3}, \frac{25}{3}$ ) C. (-3, -11) D. (2, -3)

11.  $3x + y = 6$  and  $4x + 2y = 8$   
 Handwritten work:  $4x + 2(-3x + 6) = 8$   
 $4x - 6x + 12 = 8$   
 $-2x = -4$   
 $x = 2$   
 A. (2, 0) B. (-2, 12) C. (3, 1) D. ( $-\frac{4}{3}, \frac{23}{3}$ )

12.  $2x - 2y = -2$  and  $-3x + 3y = -3$   
 Handwritten work:  $-3(y - 1) + 3y = -3$   
 $-3y + 3 + 3y = -3$   
 $3 = -3$  F  
 A. (-1, 0) B. ( $-\frac{29}{11}, -\frac{9}{11}$ ) C. (1, 2) D.  $\emptyset$

13.  $-4x + 2y = 2$  and  $3x + y = -9$   
 Handwritten work:  $-4x + 2(-3x - 9) = 2$   
 $-4x - 6x - 18 = 2$   
 $-10x = 20$   
 $x = -2$   
 A. (1, -8) B. (-1, 3) C. (2, -15) D. (-2, -3)

14.  $x + 2y = 6$  and  $3x - 4y = 28$   
 Handwritten work:  $3(-2y + 6) - 4y = 28$   
 $-6y + 18 - 4y = 28$   
 $-10y = 10$   
 $y = -1$   
 A. (8, -1) B. ( $\frac{10}{3}, \frac{13}{3}$ ) C. (-8, 7) D. ( $\frac{25}{3}, \frac{20}{3}$ )

Solve #15 - #20 by Elimination (show work)

15.  $5x + 6y = -8$  and  $2x + 3y = -5$   
 Handwritten work:  $5x + 6y = -8$   
 $-2(2x + 3y = -5)$   
 $-4x - 6y = 10$   
 $x = 2$   
 A. (-2, 3) B. (6, -2) C. (2, -3) D. (-6, 2)

16.  $4x + 2y = 8$  and  $3x + 3y = 9$   
 Handwritten work:  $3(4x + 2y = 8)$   
 $-4(3x + 3y = 9)$   
 $12x + 6y = 24$   
 $-12x - 12y = -36$   
 $-6y = -12$   
 $y = 2$   
 A. (4, -3) B. (-4, 6) C. (-1, 6) D. (1, 2)

17.  $5x + 3y = -17$  and  $4x + 2y = -14$   
 Handwritten work:  $4(5x + 3y = -17)$   
 $-5(4x + 2y = -14)$   
 $20x + 12y = -68$   
 $-20x - 10y = 70$   
 $2y = 2$   
 $y = 1$   
 A. (4, -9) B. (-4, 1) C. (-2, -6) D. (2, 10)

- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_
- 15. \_\_\_\_\_
- 16. \_\_\_\_\_
- 17. \_\_\_\_\_

Points(36) \_\_\_\_\_

18.  $x - y = -8$  and  $7x + 5y = 16$

- A. (-2, 6)    B. (-4, 6)    C. (1, 5)    D.  $\emptyset$

$$\begin{array}{r} -7(x - y = -8) \\ 7x + 5y = 16 \\ \hline -7x + 7y = 56 \\ \hline 12y = 72 \\ y = 6 \end{array}$$

19.  $6x + y = -39$  and  $3x + 2y = -15$

- A. (6, -2)    B. (-3, 2)    C. (-1, 6)    D. (-7, 3)

$$\begin{array}{r} 6x + y = -39 \\ -2(3x + 2y = -15) \\ \hline 6x + y = -39 \\ -6x - 4y = 30 \\ \hline -3y = -9 \\ y = 3 \end{array}$$

20.  $x + 5y = 17$  and  $-4x + 3y = 24$

- A. (4, 12)    B. (3, 10)    C. (-5, 12)    D. (-3, 4)

$$\begin{array}{r} 4(x + 5y = 17) \\ -4x + 3y = 24 \\ \hline 4x + 20y = 68 \\ \hline 23y = 92 \\ y = 4 \end{array}$$

Solve #21 - #24 by ANY METHOD (show work)

21.  $(3x - 2y = -7)$  and  $(2x - 5y = 10) - 3$

- A. (-2, 3)    B. (4, 8)    C. (-5, -4)    D.  $\emptyset$

$$\begin{array}{r} 6x - 4y = -14 \\ -6x + 15y = -30 \\ \hline 11y = -44 \\ y = -4 \end{array}$$

22.  $2x + 3y = 6$  and  $(x + 2y = 5) - 2$

- A. (-3, 4)    B.  $(\frac{14}{5}, \frac{3}{5})$     C. (-3, 2)    D. (-2, -6)

$$\begin{array}{r} 2x + 3y = 6 \\ -2x - 4y = -10 \\ \hline -y = -4 \\ y = 4 \end{array}$$

23.  $-4y = -3x - 4$  and  $(x + 3y = -10) - 3$

- A. (-4, -2)    B. (-8, 6)    C. (-2, 7)    D.  $(\frac{14}{3}, \frac{34}{3})$

$$\begin{array}{r} 3x - 4y = -4 \\ -3x - 9y = 30 \\ \hline -13y = 26 \\ y = -2 \end{array}$$

24.  $(4x + 7y = 7)$  and  $(3x + 4y = 5) - 4$

- A.  $(-\frac{2}{3}, \frac{4}{3})$     B.  $(-\frac{23}{5}, \frac{12}{5})$     C.  $(\frac{21}{15}, \frac{1}{5})$     D.  $(\frac{181}{111}, \frac{1}{37})$

$$\begin{array}{r} 12x + 21y = 21 \\ -12x - 16y = -20 \\ \hline 5y = 1 \\ y = \frac{1}{5} \end{array}$$

$$\begin{array}{r} 3x + 4(\frac{1}{5}) = 5 \\ 3x + \frac{4}{5} = 5 \\ 3x = 5 - \frac{4}{5} = \frac{25}{5} - \frac{4}{5} = \frac{21}{5} \\ \frac{1}{3} \cdot 3x = \frac{21}{5} \cdot \frac{1}{3} \\ x = \frac{21}{15} \end{array}$$

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

21. \_\_\_\_\_

22. \_\_\_\_\_

23. \_\_\_\_\_

24. \_\_\_\_\_

Points(28) \_\_\_\_\_

Perform the indicated matrix operations.

25.  $\begin{bmatrix} 3 & 5 & -2 \\ 5 & -4 & 6 \end{bmatrix} + \begin{bmatrix} 5 & -3 & 7 \\ -7 & 3 & 1 \end{bmatrix}$

A.  $\begin{bmatrix} 8 & 2 & 5 \\ -2 & -1 & 7 \end{bmatrix}$  B.  $\begin{bmatrix} 8 & 2 & 5 \\ -2 & 1 & 7 \end{bmatrix}$  C.  $\begin{bmatrix} 8 & 2 & 5 \\ 2 & -1 & 7 \end{bmatrix}$  D.  $\begin{bmatrix} 8 & 2 & -5 \\ -2 & -1 & 7 \end{bmatrix}$

26.  $\begin{bmatrix} -1 & 5 & -3 \\ 3 & -5 & 6 \end{bmatrix} - \begin{bmatrix} 5 & -4 & -1 \\ 6 & -6 & 3 \end{bmatrix}$

A.  $\begin{bmatrix} -6 & 9 & 2 \\ -3 & 1 & 3 \end{bmatrix}$  B.  $\begin{bmatrix} -6 & 9 & -2 \\ -3 & -11 & 3 \end{bmatrix}$  C.  $\begin{bmatrix} -6 & 9 & -2 \\ -3 & 1 & 3 \end{bmatrix}$  D.  $\begin{bmatrix} -6 & 9 & -2 \\ 3 & 1 & 3 \end{bmatrix}$

27.  $4 \begin{bmatrix} -2 & 5 & 7 \\ 3 & -4 & 6 \end{bmatrix}$

A.  $\begin{bmatrix} 2 & 9 & 11 \\ 7 & 0 & 10 \end{bmatrix}$

B.  $\begin{bmatrix} -8 & 20 & 24 \\ 12 & -16 & 24 \end{bmatrix}$

C.  $\begin{bmatrix} -8 & 20 & 28 \\ 12 & -16 & 24 \end{bmatrix}$

D.  $\begin{bmatrix} -8 & 20 & 28 \\ 12 & 16 & 24 \end{bmatrix}$

25. \_\_\_\_\_

26. \_\_\_\_\_

27. \_\_\_\_\_

Points(12) \_\_\_\_\_