

## Systems of Equations Review

Date \_\_\_\_\_ Period \_\_\_\_\_

**3 Types of Special Systems Solutions**

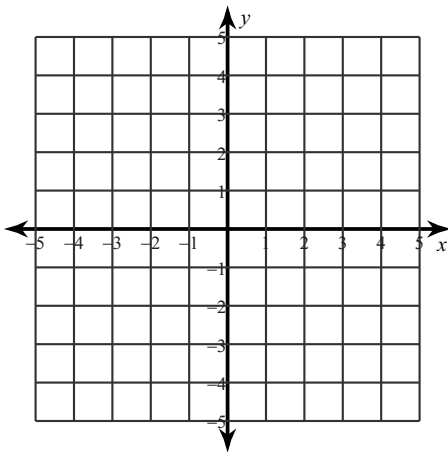
1) Infinite Solutions

2) No Solution

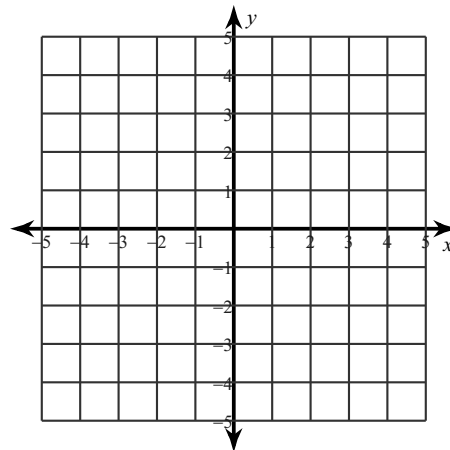
3) One Solution

**SOLVING SYSTEMS BY GRAPHING****Notes:**

$$4) \begin{aligned} y &= x - 4 \\ y &= -\frac{5}{3}x + 4 \end{aligned}$$

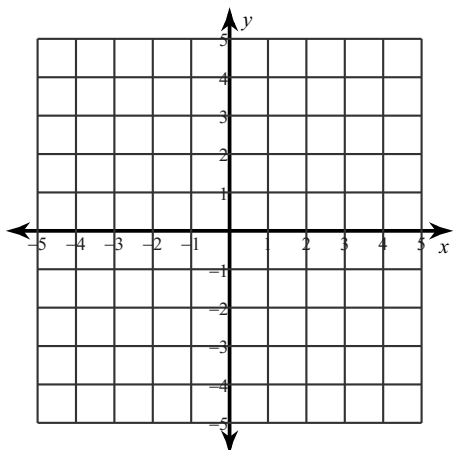


$$5) \begin{aligned} y &= x + 3 \\ y &= 7x - 3 \end{aligned}$$



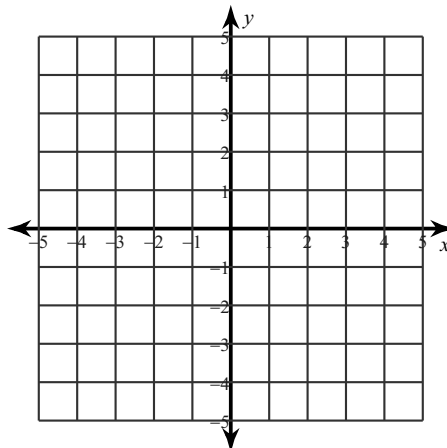
$$6) \ y = \frac{3}{2}x - 4$$

$$y = -2x + 3$$



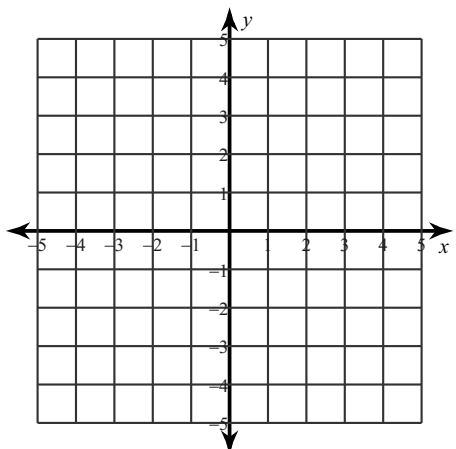
$$7) \ y = 7x + 4$$

$$y = x - 2$$



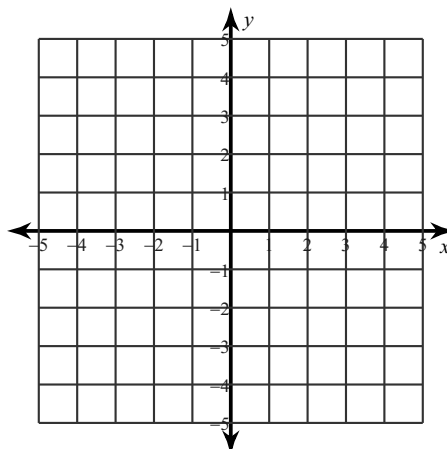
$$8) \ x - 4y = 8$$

$$3x + 4y = 8$$



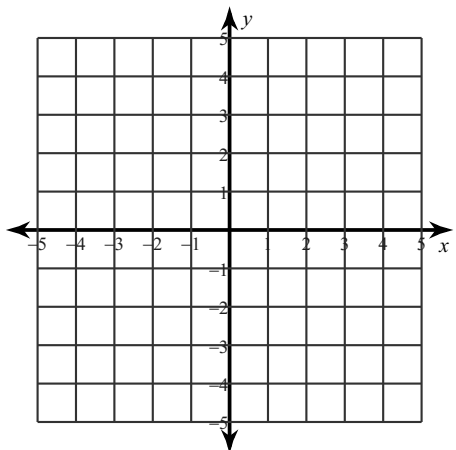
$$9) \ 4x - y = -3$$

$$2x + y = -3$$



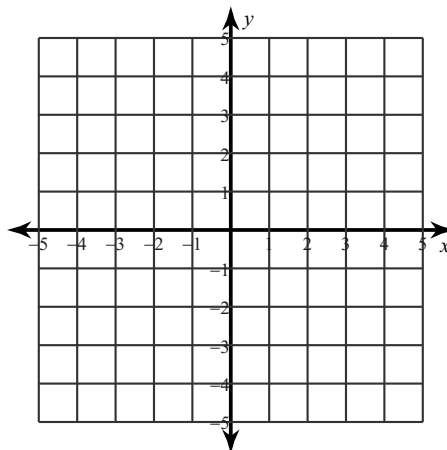
$$10) \ 2x - y = -4$$

$$x - 2y = 4$$



$$11) \ 3x - 2y = 4$$

$$x - 4y = -12$$



**Solve each system by substitution.**

**Notes:**

$$\begin{aligned} 12) \quad y &= -8x + 24 \\ y &= 6x - 4 \end{aligned}$$

$$\begin{aligned} 13) \quad y &= -2x + 5 \\ y &= -5x + 11 \end{aligned}$$

$$\begin{aligned} 14) \quad y &= -8x + 3 \\ y &= -6x + 1 \end{aligned}$$

$$\begin{aligned} 15) \quad y &= -5x + 18 \\ y &= x - 12 \end{aligned}$$

$$\begin{aligned} 16) \quad -x - 7y &= -20 \\ y &= -4x - 1 \end{aligned}$$

$$\begin{aligned} 17) \quad y &= -3x - 17 \\ -x - 4y &= -20 \end{aligned}$$

$$\begin{aligned} 18) \quad y &= 6x - 8 \\ 18x - 3y &= 24 \end{aligned}$$

$$\begin{aligned} 19) \quad 2x - 4y &= -18 \\ y &= 4x - 6 \end{aligned}$$

$$\begin{aligned} 20) \quad & 4x - y = -20 \\ & x + 6y = 20 \end{aligned}$$

$$\begin{aligned} 21) \quad & x - 6y = 7 \\ & -2x - 6y = 4 \end{aligned}$$

$$\begin{aligned} 22) \quad & 4x - y = 11 \\ & -5x + y = -15 \end{aligned}$$

$$\begin{aligned} 23) \quad & 6x - 3y = 24 \\ & 3x + y = 7 \end{aligned}$$

**Solve each system by elimination.**

**Notes:**

$$\begin{aligned} 24) \quad & 8x - 5y = 17 \\ & -8x + 5y = -21 \end{aligned}$$

$$\begin{aligned} 25) \quad & -2x + 7y = 1 \\ & 2x + 9y = 15 \end{aligned}$$

$$\begin{aligned} 26) \quad & x + 10y = 26 \\ & -6x - 10y = -6 \end{aligned}$$

$$\begin{aligned} 27) \quad & -4x + 8y = 28 \\ & 4x - y = 14 \end{aligned}$$

$$\begin{aligned} 28) \quad & 2x - 8y = -4 \\ & x - 8y = 6 \end{aligned}$$

$$\begin{aligned} 29) \quad & 8x + 3y = 20 \\ & 4x + 3y = 4 \end{aligned}$$

$$\begin{aligned} 30) \quad & -5x - 6y = 1 \\ & -5x - y = 21 \end{aligned}$$

$$\begin{aligned} 31) \quad & -2x + 2y = -12 \\ & -2x + 2y = -12 \end{aligned}$$

$$\begin{aligned} 32) \quad & 3x - 5y = -21 \\ & -6x - 6y = -6 \end{aligned}$$

$$\begin{aligned} 33) \quad & 8x - 2y = 18 \\ & -4x - y = -7 \end{aligned}$$

$$\begin{aligned} 34) \quad & 12x + 3y = -27 \\ & 6x + y = -13 \end{aligned}$$

$$\begin{aligned} 35) \quad & 12x + 3y = 24 \\ & 3x - y = 13 \end{aligned}$$

$$\begin{aligned} 36) \quad & -90x + 10y = -23 \\ & 54x - 6y = 12 \end{aligned}$$

$$\begin{aligned} 37) \quad & 5x + 5y = -25 \\ & -4x + 8y = -28 \end{aligned}$$

$$\begin{aligned} 38) \quad 2x - 2y &= 18 \\ 3x + 3y &= 9 \end{aligned}$$

$$\begin{aligned} 39) \quad -3x + 3y &= 0 \\ 10x - 4y &= -18 \end{aligned}$$

- 40) The senior classes at High School A and High School B planned separate trips to the indoor climbing gym. The senior class at High School A rented and filled 3 vans and 13 buses with 612 students. High School B rented and filled 3 vans and 6 buses with 297 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.
- 41) The school that Arjun goes to is selling tickets to the annual talent show. On the first day of ticket sales the school sold 8 senior citizen tickets and 2 child tickets for a total of \$62. The school took in \$80 on the second day by selling 8 senior citizen tickets and 8 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

- 42) Micaela and Shawna each improved their yards by planting daylilies and ivy. They bought their supplies from the same store. Micaela spent \$58 on 5 daylilies and 1 pot of ivy. Shawna spent \$90 on 5 daylilies and 5 pots of ivy. Find the cost of one daylily and the cost of one pot of ivy.
- 43) Gabriella and Scott are selling pies for a school fundraiser. Customers can buy cherry pies and pumpkin pies. Gabriella sold 4 cherry pies and 1 pumpkin pie for a total of \$64. Scott sold 4 cherry pies and 13 pumpkin pies for a total of \$256. Find the cost each of one cherry pie and one pumpkin pie.
- 44) Alberto and Ryan each improved their yards by planting hostas and geraniums. They bought their supplies from the same store. Alberto spent \$13 on 2 hostas and 1 geranium. Ryan spent \$83 on 10 hostas and 7 geraniums. Find the cost of one hosta and the cost of one geranium.
- 45) Shawna and Mark each improved their yards by planting rose bushes and ornamental grass. They bought their supplies from the same store. Shawna spent \$16 on 1 rose bush and 6 bunches of ornamental grass. Mark spent \$36 on 4 rose bushes and 10 bunches of ornamental grass. What is the cost of one rose bush and the cost of one bunch of ornamental grass?

- 46) Jack and Shanice are selling flower bulbs for a school fundraiser. Customers can buy bags of windflower bulbs and packages of crocus bulbs. Jack sold 4 bags of windflower bulbs and 10 packages of crocus bulbs for a total of \$166. Shanice sold 13 bags of windflower bulbs and 2 packages of crocus bulbs for a total of \$82. Find the cost each of one bag of windflower bulbs and one package of crocus bulbs.
- 47) Jessica and Mike each improved their yards by planting grass sod and ivy. They bought their supplies from the same store. Jessica spent \$159 on 6 ft<sup>2</sup> of grass sod and 13 pots of ivy. Mike spent \$192 on 12 ft<sup>2</sup> of grass sod and 12 pots of ivy. Find the cost of one ft<sup>2</sup> of grass sod and the cost of one pot of ivy.



## Answers to Systems of Equations Review (ID: 1)

- 1)
- 5) (1, 4)
- 9) (-1, -1)
- 13) (2, 1)
- 17) (-8, 7)
- 20) (-4, 4)
- 24) No solution
- 28) (-10, -2)
- 31) Infinite number of solutions
- 34) (-2, -1)
- 38) (6, -3)
- 41) senior citizen ticket: \$7, child ticket: \$3
- 43) cherry pie: \$12, pumpkin pie: \$16
- 45) rose bush: \$4, bunch of ornamental grass: \$2
- 46) bag of windflower bulbs: \$4, package of crocus bulbs: \$15
- 47) ft<sup>2</sup> of grass sod: \$7, pot of ivy: \$9
- 2) (2, -1)
- 6) (2, -1)
- 10) (-4, -4)
- 14) (1, -5)
- 18) Infinite number of solutions
- 21) (1, -1)
- 25) (3, 1)
- 29) (4, -4)
- 32) (-2, 3)
- 35) (3, -4)
- 39) (-3, -3)
- 3) (-1, -3)
- 7) (-1, -3)
- 11) (4, 4)
- 15) (5, -7)
- 19) (3, 6)
- 22) (4, 5)
- 26) (-4, 3)
- 30) (-5, 4)
- 33) (2, -1)
- 36) No solution
- 40) Van: 9, Bus: 45
- 42) daylily: \$10, pot of ivy: \$8
- 44) hosta: \$2, geranium: \$9
- 4) (3, -1)
- 8) (4, -1)
- 12) (2, 8)
- 16) (-1, 3)
- 23) (3, -2)
- 27) (5, 6)
- 37) (-1, -4)