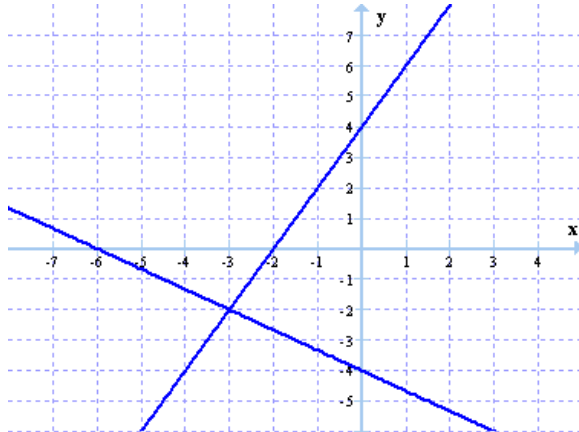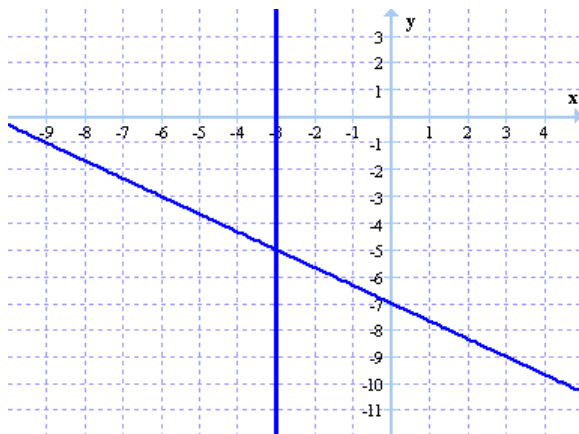Classroom Voting Questions: Algebra

Section 3.3 Solving Systems of Linear Equations in Two Variables Graphically and Numerically

1. The graph of a system of linear equations is given below.

Which of the following is the solution to the system?
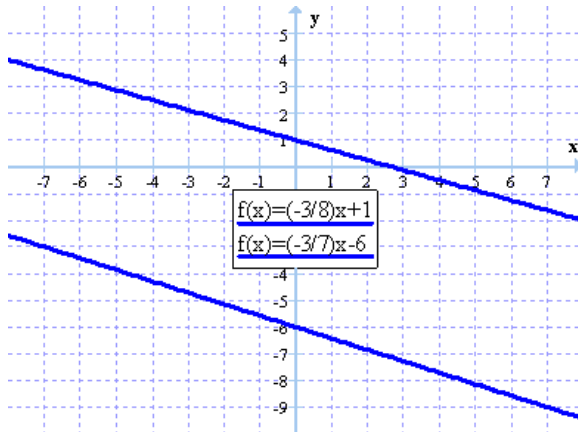
   (a) $(-237, 318)$
   (b) $(-3, -2)$
   (c) $(-6, 0)$
   (d) No solution
   (e) Infinitely many solutions

2. The graph of a system of linear equations is given below.

Which of the following is the solution to the system?

(a) $(-3, -5)$

(b) $(-3, -7)$

(c) No solution

(d) Infinitely many solutions

3. The graph of a system of linear equations is given below, along with the equations themselves.

Which of the following is the solution to the system?

(a) $(0, -6)$

(b) $(0, 1)$

(c) $(3, 0)$

(d) $(-392/3, 50)$

(e) No solution

(f) Infinitely many solutions

4. A table of values for a system of linear equations is given below.

x	-8	-6	-4	-2	0	2	4	6
y_1	-6	-3	0	3	6	9	12	15
y_2	2	1	0	-1	-2	-3	-4	-5

Which of the following is the solution to the system?

(a) $(0, 0)$

(b) $(-4, 0)$

(c) $(0, 6, -2)$

(d) No solution

(e) Infinitely many solutions

5. A table of values for a system of linear equations is given below.

x	-2	-1	0	1	2	3	4	5
y_1	-3	-1	1	3	5	7	9	11
y_2	5	3	1	-1	-3	-5	-7	-9

Which of the following is the solution to the system?

(a) $(0, 1)$

(b) $(-1, -1)$

(c) $(-1, 3)$

(d) No solution

(e) Infinitely many solutions

6. A table of values for a system of linear equations is given below.

x	-2	-1	0	1	2	3	4	5
y_1	0	-1	-2	-3	-4	-5	-6	-7
y_2	-10	-9	-8	-7	-6	-5	-4	-3

Which of the following is the solution to the system?

(a) $(-5, -5)$

(b) $(3, -5)$

(c) $(3, -5, -5)$

(d) No solution

(e) Infinitely many solutions

7. A table of values for a system of linear equations is given below.

x	-4	-3	-2	-1	0	1	2	3
y_1	5	5	5	5	5	5	5	5
y_2	-4	-3	-2	-1	0	1	2	3

Which of the following is the solution to the system?

(a) $(-4, 5)$

(b) $(0, 0)$

(c) $(5, 5)$

(d) No solution

(e) Infinitely many solutions

8. A table of values for a system of linear equations is given below.

x	4	7	10	13	16	19	22	25
y_1	3	0	-3	-6	-9	-12	-15	-18
y_2	3	0	-3	-6	-9	-12	-15	-18

Which of the following is the solution to the system?

(a) $(4, 3)$

(b) $(0, 0)$

(c) No solution

(d) Infinitely many solutions

9. Which of the following ordered pairs is a solution to the system
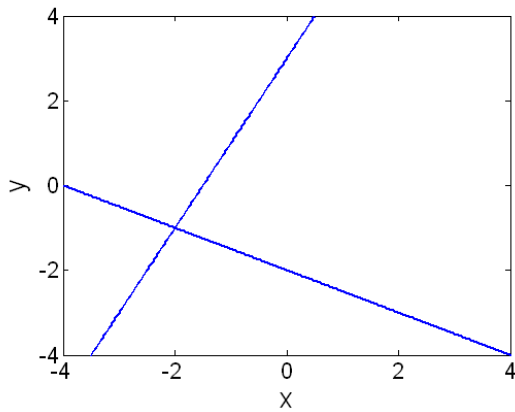$f(x) = \begin{cases} -2x + 3y = 11 \\ -2x + 2y = 4 \end{cases}$?

(a) (-4, 1)

(b) (1, 3)

(c) (5, 7)

(d) (-1, 3)

10. What is the solution to the following system of equations?

$$2x + y = 3$$
$$3x - y = 7$$

(a) $x = 4$ and $y = -5$

(b) $x = 4$ and $y = 5$

(c) $x = 2$ and $y = -1$

(d) $x = 2$ and $y = 1/2$

(e) There are an infinite number of solutions to this system.

(f) There are no solutions to this system.

11. Which of the following systems of equations could be represented in the graph below?

(a) $3x + 3y = -6$, $x + 2y = 3$

(b) $x - y = -5$, $2x + y = 4$

(c) $-8x + 4y = 12$, $2x + 4y = -8$

(d) $-x + 3y = 9$, $2x - y = 4$

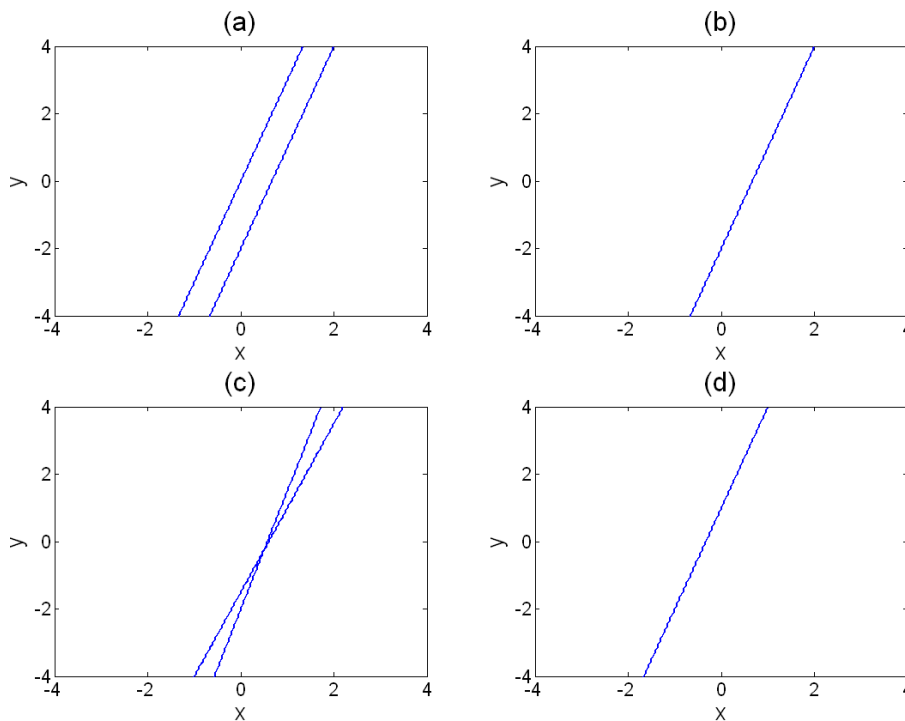12. What is the solution to the following system of equations?

$$2x + y = 3$$
$$4x + 2y = 6$$

(a) $x = 0$ and $y = 0$

(b) $x = 2$ and $y = -1$

(c) $x = 0$ and $y = 1$

(d) $x = 0$ and $y = 3$

(e) There are an infinite number of solutions to this system.

(f) There are no solutions to this system.

13. Without actually solving, what can you say about the system $f(x) = \begin{cases} y = 3x + 7 \\ y = 3x - 2 \end{cases}$?
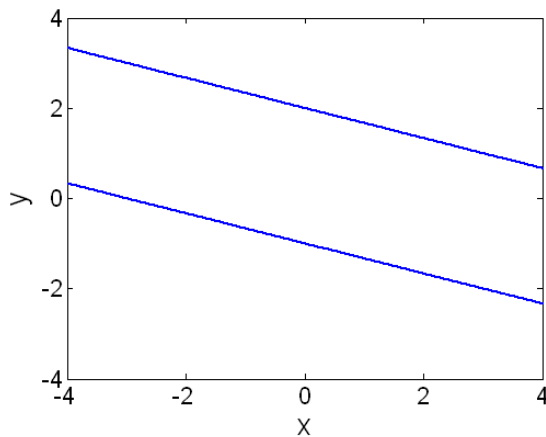
(a) consistent, one solution

(b) consistent, dependent (infinitely many solutions)

(c) inconsistent

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14. Which of the graphs below could represent the following linear system?

$$3x - y = 2$$
$$-9x + 3y = -6$$

(a)

(b)

(c)

(d)

15. Which of the following systems of equations could be represented in the graph below?


(a) $-x + 3y = 6$, $2x + 6y = -6$

(b) $-x + 3y = 6$, $2x + 6y = 12$

(c) $x + 3y = 6$, $2x + 6y = 12$

(d) $x + 3y = 6$, $x + 3y = -3$

16. What is the solution to the following system of equations?

$$-3x + 2y = 4$$
$$12x - 8y = 10$$

(a) $x = -4/3$ and $y = 0$

(b) $x = 1/2$ and $y = -1/2$

(c) $x = 0$ and $y = 2$

(d) $x = 1/3$ and $y = 5/2$

(e) There are an infinite number of solutions to this system.

(f) There are no solutions to this system.

17. We have a system of three linear equations with two unknowns, as plotted in the graph below. How many solutions does this system have?
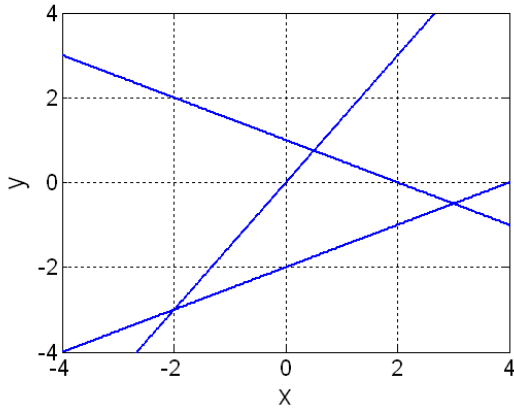
(a) 0

(b) 1

(c) 2

(d) 3

(e) Infinite

18. A system of linear equations could *not* have exactly _____ solutions.

(a) 0

(b) 1

(c) 2

(d) infinite

(e) All of these are possible numbers of solutions to a system of linear equations.

19. Is the ordered triple $(2, -1, 3)$ a solution of the following linear system?

$$\begin{cases} 5x + 3y - 2z = 1 \\ x - y + z = 6 \\ 2x + 2y - z = -1 \end{cases}$$

(a) Yes, and I am very confident.

(b) Yes, but I am not very confident.

(c) No, but I am not very confident.

(d) No, and I am very confident.

20. Solve the following linear system.

$$\begin{cases} x + 5y + 3z = 7 \\ 2x + 11y - 4z = 6 \end{cases}$$

(a) $\{(7z + 47, -2z - 8, z)\}$

(b) $\{(-53z + 47, 10z - 8, z)\}$

(c) $\{(47z + 47, -10z - 8, z)\}$

(d) There is no solution. (The solution set is the empty set.)