Algebra I - Chapter 6 Test 1 Review (6-1 through 6-4)

What is the solution of the system? Use a graph.





Name: _____





- 5. Tom has a collection of 30 CDs and Nita has a collection of 18 CDs. Tom is adding 1 CD a month to his collection while Nita is adding 5 CDs a month to her collection. Find the number of months after which they will have the same number of CDs.
 - a. 1 month

b.

- c. 2 months
- 3 months
- d. 33 months
- 6. Kendra owns a restaurant. She charges \$3.00 for 2 eggs and one piece of toast, and \$1.80 for one egg and one piece of toast. How much does Kendra charge for an egg? A piece of toast?
 - a. \$1.20 per egg; \$.60 for toast
- c. \$.60 per egg; \$.60 for toast
- b. \$.60 per egg; \$1.20 for toast
- d. \$1.20 per egg; \$1.20 for toast



What is the solution of the system? Use a graph.



What is the solution of the system? Use substitution.

What is the solution of the system? Use substitution.

13.	2x - y = -7 4x - y = -4 a. (-1.5, 4)	b. (1.5, 10)	c. (4, -1.5)	d. (-1.5, -2)
14.	8x - 2y = 10 3x - y = 9 a. (-4, -21)	b. (2, 3)	c. (-2, -12)	d. (2, -3)
13.	x - y = -6 6x - 3y = -9 a. (1, 7)	b. (3, 9)	c. $\left(-6,\frac{3}{2}\right)$	d. (4, -11)

16. The length of a rectangle is 3 centimeters more than 3 times the width. If the perimeter of the rectangle is 46 centimeters, find the dimensions of the rectangle.

a.	length = 5 cm; width = 18 cm	с.	length = 13 cm ; width = 8 cm
b.	length = 13 cm ; width = 5 cm	d.	length = 18 cm ; width = 5 cm

17. A corner store sells two kinds of baked goods: cakes and pies. A cake costs \$5 and a pie costs \$7. In one day, the store sold 15 baked goods for a total of \$91. How many cakes did they sell?

a.	7 cakes	с.	8 cakes
b.	4 cakes	d.	5 cakes

How many solutions does the system have?

18. x = -4y + 4
2x + 8y = 8
a. one solution
b. two solutionsc. infinitely many solutions
d. no solution19. y = 6x + 2
3y - 18x = 12
a. one solution
b. two solutionsc. infinitely many solutions
d. no solution

What is the solution of the system? Use elimination.

8x + 6y = 46a. (8, 5)

21. 5x + 4y = -2x - 4y = 14a. (3, -4.3)b. (-3, 2) c. (2, -3)d. (4, 1) 22. -12x - y = 617x + y = 4a. (-30, 2)b. (-2, 30) c. (2, -30)d. (30, -2)23. 3x - 4y = 9-3x + 2y = 9c. (-3, -6)a. (3, 9) b. (-27, -9) d. (-9, -9)24. Sharon has some one-dollar bills and some five-dollar bills. She has 14 bills. The value of the bills is \$30. Solve a system of equations using elimination to find how many of each kind of bill she has. 4 five-dollar bills, 10 one-dollar bills c. 5 five-dollar bills, 5 one-dollar bills a. 3 five-dollar bills, 15 one-dollar bills 5 five-dollar bills, 9 one-dollar bills b. d. 25. The school cafeteria sells two kinds of wraps: vegetarian and chicken. The vegetarian wrap costs \$1.00 and the chicken wrap costs \$1.80. Today they made \$98.80 from the 70 wraps sold. How many of the wraps sold were vegetarian? a. 36 wraps 30 wraps C. b. 37 wraps d. 34 wraps What is the solution of the system? Use elimination. 26. 5x + 8y = -297x - 2y = -67b. $\left(-10, \frac{21}{8}\right)$ c. (-1, -3) d. (-9, 2)a. (-7, 9) 27. 3x - 4y = -24x + y = -1a. (-4, 3) b. (0, 6) c. (3, 4) d. (4, 3) 28. x + 3y = 135x + 6y = 38a. (4, 3) b. (5, 1) c. (4, 2) d. (3, 4)29. 3x = -18 + 4y16y = 58 + 5xa. (3, -2)b. (-2, 3) c. (-2, 4)d. (3, 16) What is the solution of the system? Use elimination. 30. 5x + 7y = 32

b. (1, 5)

c. (7, 0)

d. (5, 1)

31. 3x + 9y = 33-10x - 6y = -14a. (-4, 5)b. (4, -1)c. (-10, 3)d. (-1, 4)32. -9.3x + 8.6y = 45.17.1x + 1.7y = -17.9a. (2, -3)b. (7.1, -9.3)c. (-2, 3)d. (-3, 2)How many solutions does the system have? 33. x - 2y = 63x - 6y = 18a. one solution c. infinitely many solutions b. two solutions d. no solution 34. y - 5x = -63y - 15x = -12a. one solution c. infinitely many solutions b. two solutions d. no solution 35. You decide to market your own custom computer software. You must invest \$3255 for computer hardware, and spend \$2.90 to buy and package each disk. If each program sells for \$13.75, how many copies must you sell to break even? a. 196 copies b. 301 copies c. 300 copies d. 195 copies

- 36. Mike and Kim invest \$12,000 in equipment to print yearbooks for schools. Each yearbook costs \$5 to print and sells for \$15. How many yearbooks must they sell before their business breaks even?
 a. 800 yearbooks
 b. 1,200 yearbooks
 c. 2400 yearbooks
 d. 1,800 yearbooks
- 37. At the local ballpark, the team charges \$5 for each ticket and expects to make \$1,300 in concessions. The team must pay its players \$1,800 and pay all other workers \$1,500. Each fan gets a free bat that costs the team \$3 per bat. How many tickets must be sold to break even?

 a. 2300 tickets
 b. 400 tickets
 c. 250 tickets
 d. 1000 tickets
- 38. A motorboat can go 8 miles downstream on a river in 20 minutes. It takes 30 minutes for the boat to go upstream the same 8 miles. Find the speed of the current.
 a. 20 mph
 b. 16 mph
 c. 24 mph
 d. 4 mph
 - 39. A salmon can go 40 feet downstream on a river in 2 seconds. It takes 8 seconds for this salmon to go back upstream the same 40 feet. Find the speed of the current.
 - 40. A plane travels 236 miles in 1.4 hours against the wind. On the return trip, it travels the same 236 miles in 1 hour. Find the speed of the wind.

Algebra I - Chapter 6 Test 1 Review (6-1 through 6-4) Answer Section

PTS: 1 DIF: L2 1. ANS: A REF: 6-1 Solving Systems By Graphing OBJ: 6-1.1 To solve systems of equations by graphing NAT: CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 1 Solving a System of Equations by Graphing KEY: system of linear equations | approximate solution of a system of linear equations | consistent | independent 2. ANS: B **PTS:** 1 DIF: L3 REF: 6-1 Solving Systems By Graphing OBJ: 6-1.1 To solve systems of equations by graphing NAT: CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 1 Solving a System of Equations by Graphing KEY: consistent | independent | approximate solution of a system of linear equations | system of linear equations 3. ANS: C PTS: 1 DIF: L3 REF: 6-1 Solving Systems By Graphing OBJ: 6-1.1 To solve systems of equations by graphing NAT: CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 1 Solving a System of Equations by Graphing KEY: consistent | independent | approximate solution of a system of linear equations | system of linear equations 4. ANS: A DIF: L3 PTS: 1 REF: 6-1 Solving Systems By Graphing OBJ: 6-1.1 To solve systems of equations by graphing NAT: CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 1 Solving a System of Equations by Graphing KEY: consistent | independent | approximate solution of a system of linear equations | system of linear equations 5. ANS: B **PTS:** 1 DIF: L3 REF: 6-1 Solving Systems By Graphing OBJ: 6-1.1 To solve systems of equations by graphing NAT: CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 2 Writing a System of Equations KEY: consistent | independent | solution of a system of linear equations | system of linear equations DIF: L4 6. ANS: A **PTS:** 1 REF: 6-1 Solving Systems By Graphing OBJ: 6-1.1 To solve systems of equations by graphing NAT: CC A.REI.6| A.4.d TOP: 6-1 Problem 2 Writing a System of Equations STA: PA M11.D.2.1.4 KEY: consistent | independent | solution of a system of linear equations | system of linear equations 7. ANS: A PTS: 1 DIF: L3 REF: 6-1 Solving Systems By Graphing OBJ: 6-1.2 To analyze special systems NAT: CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 3 Systems With Infinitely Many Solutions or No Solution KEY: system of linear equations | solution of a system of linear equations | inconsistent REF: 6-1 Solving Systems By Graphing 8. ANS: A PTS: 1 DIF: L3 OBJ: 6-1.2 To analyze special systems NAT: CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-1 Problem 3 Systems With Infinitely Many Solutions or No Solution

KEY: system of linear equations | solution of a system of linear equations | consistent | dependent

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- 18. ANS: C **PTS:** 1 DIF: L3 REF: 6-2 Solving Systems Using Substitution OBJ: 6-2.1 To solve systems of equations using substitution NAT: CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-2 Problem 4 Systems With Infinitely Many Solutions or No Solution KEY: substitution method 19. ANS: D **PTS:** 1 DIF: L3 REF: 6-2 Solving Systems Using Substitution OBJ: 6-2.1 To solve systems of equations using substitution NAT: CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-2 Problem 4 Systems With Infinitely Many Solutions or No Solution KEY: substitution method 20. ANS: C PTS: 1 DIF: L3 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 1 Solving a System by Adding Equations KEY: elimination method | exact solution of a system of linear equations 21. ANS: C PTS: 1 DIF: L3 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 1 Solving a System by Adding Equations KEY: elimination method | exact solution of a system of linear equations DIF: L2 22. ANS: C PTS: 1 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 1 Solving a System by Adding Equations KEY: elimination method | exact solution of a system of linear equations 23. ANS: D DIF: L3 **PTS:** 1 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 1 Solving a System by Adding Equations KEY: elimination method | exact solution of a system of linear equations 24. ANS: A PTS: 1 DIF: L3 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 2 Solving a System by Subtracting Equations KEY: elimination method | exact solution of a system of linear equations 25. ANS: D PTS: 1 DIF: L4 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 2 Solving a System by Subtracting Equations
 - KEY: elimination method | exact solution of a system of linear equations

26. ANS: D PTS: 1 DIF: L3 **REF: 6-3 Solving Systems Using Elimination** OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 3 Solving a System by Multiplying One Equation KEY: elimination method | exact solution of a system of linear equations 27. ANS: A **PTS:** 1 DIF: L2 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5| CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 3 Solving a System by Multiplying One Equation KEY: elimination method | exact solution of a system of linear equations 28. ANS: A DIF: L2 PTS: 1 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 3 Solving a System by Multiplying One Equation KEY: elimination method | exact solution of a system of linear equations 29. ANS: B PTS: 1 DIF: L4 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 3 Solving a System by Multiplying One Equation KEY: elimination method | exact solution of a system of linear equations DIF: L2 30. ANS: D PTS: 1 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 4 Solving a System by Multiplying Both Equations KEY: elimination method | exact solution of a system of linear equations 31. ANS: D PTS: 1 DIF: L3 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 4 Solving a System by Multiplying Both Equations KEY: elimination method | exact solution of a system of linear equations 32. ANS: D PTS: 1 DIF: L4 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 4 Solving a System by Multiplying Both Equations KEY: elimination method | exact solution of a system of linear equations 33. ANS: C PTS: 1 DIF: L3 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 5 Finding the Number of Solutions KEY: elimination method | exact solution of a system of linear equations

- 34. ANS: D PTS: 1 DIF: L3 REF: 6-3 Solving Systems Using Elimination OBJ: 6-3.1 To solve systems by adding or subtracting to eliminate a variable NAT: CC A.REI.5 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-3 Problem 5 Finding the Number of Solutions KEY: elimination method | exact solution of a system of linear equations 35. ANS: C **PTS:** 1 DIF: L3 REF: 6-4 Applications of Linear Systems OBJ: 6-4.1 To choose the best method for solving a system of linear equations NAT: CC N.Q.2 |CC N.Q.3 |CC A.CED.3 |CC A.REI.6 |A.4.d STA: PA M11.D.2.1.4 TOP: 6-4 Problem 1 Finding a Break-Even Point KEY: break-even point 36. ANS: B **PTS:** 1 DIF: L3 REF: 6-4 Applications of Linear Systems OBJ: 6-4.1 To choose the best method for solving a system of linear equations NAT: CC N.Q.2 CC N.Q.3 CC A.CED.3 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4 TOP: 6-4 Problem 1 Finding a Break-Even Point KEY: break-even point 37. ANS: D **PTS:** 1 DIF: L3 REF: 6-4 Applications of Linear Systems OBJ: 6-4.1 To choose the best method for solving a system of linear equations NAT: CC N.Q.2| CC N.Q.3| CC A.CED.3| CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-4 Problem 1 Finding a Break-Even Point KEY: break-even point 38. ANS: D **PTS:** 1 DIF: L3 REF: 6-4 Applications of Linear Systems OBJ: 6-4.1 To choose the best method for solving a system of linear equations NAT: CC N.Q.2| CC N.Q.3| CC A.CED.3| CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-4 Problem 3 Solving a Wind or Current Problem KEY: constraints | viable solutions 39. ANS: 7.5 ft/s PTS: 1 DIF: L3 REF: 6-4 Applications of Linear Systems OBJ: 6-4.1 To choose the best method for solving a system of linear equations NAT: CC N.Q.2| CC N.Q.3| CC A.CED.3| CC A.REI.6| A.4.d STA: PA M11.D.2.1.4 TOP: 6-4 Problem 3 Solving a Wind or Current Problem KEY: constraints | viable solutions 40. ANS: 33.7 mph PTS: 1 DIF: L3 REF: 6-4 Applications of Linear Systems
 - OBJ: 6-4.1 To choose the best method for solving a system of linear equations
 - NAT: CC N.Q.2 CC N.Q.3 CC A.CED.3 CC A.REI.6 A.4.d STA: PA M11.D.2.1.4
 - TOP: 6-4 Problem 3 Solving a Wind or Current Problem KEY: constraints | viable solutions