Algebra 2 Name_____

Unit 4 review

Date_____ Period____

4.1 Solve each system by graphing.

1) $y = x + 4$
$y = -6x - 3$

2) $y = -x - 2$
$y = -4x + 4$

3) $y = -4x - 2$
$y = x + 3$

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

5) $y + 6x + 4 = 0$
$x + \frac{1}{6}y + \frac{2}{3} = 0$

6) $0 = 4y - 2x + 16$
$8y - 40 = 13x$

7) $0 = x - 16 - 4y$
$-4 + 2y = -x$

8) $-5x + 12 = 2y$
$y + 3 = 2x$

9) $2x + 3 = -3y$
$13x = 48 - 6y$

10) $0 = -24 - 21x - 12y$
$0 = 4y - 32 - 3x$

4.1 Solve each system by substitution.

11) $8x + 2y = -7$
$y = -4x - 1$

12) $y = -8x - 22$
$4x + 8y = 4$

13) $8x - 3y = -6$
$-2x + y = 0$

14) $5x + 3y = -1$
$-7x + y = -9$

15) $-3x + y = -21$
$4x + 4y = -4$

16) $-x - 6y = 18$
$-x + y = -3$

17) $-2x - 4y = 12$
$3x + 3y = 3$

18) $-2x - 4y = -12$
$8x - 4y = 8$

19) $7x + 3y = -10$
$2x - 2y = -20$

20) $-3x - 4y = -21$
$-2x + 3y = 3$

4.3 Solve each system by elimination.

21) $-x - y = 7$
$x - y = -7$

22) $4x + y = 21$
$-2x - y = -7$

23) $-3x + 5y = -15$
$-3x - 8y = 24$

24) $-4x + 8y = 12$
$-9x + 8y = 17$

25) $6x - y = 5$
$5x - 9y = -4$

26) $2x + 5y = 0$
$-4x - 15y = 20$

27) $10x - 9y = 23$
$5x - 6y = 22$

28) $-3x + 8y = 14$
$-7x - 5y = 9$

29) $-3x - 5y = -28$
$4x - 4y = 16$

30) $3x - 4y = -6$
$10x - 6y = 24$

4.4 Solve each system

31) $x + 5y - z = 23$
$4x - y - z = -19$
$-x + y + z = 7$

32) $x - 3y + z = -13$
$-2x + 3y - z = 14$
$5x + 3y - 4z = 7$

33) $-5x - y + 3z = 22$
$4x + y + 4z = -11$
$x + y - 10z = -13$

34) $-x + y + 2z = 6$
$x - 3y + 4z = 10$
$x + 4y - 2z = -16$

35) $-2x - y - z = -13$
$3x + y - z = 8$
$-4x - y + 3z = 6$

36) $x + 3y - 5z = 28$
$-5x - 3y - 2z = -20$
$6x + 4y + 4z = 18$

37) $5x - 2y + z = 26$
$-4x + 2y + 4z = -26$
$-6x - 3y + 2z = -29$

38) $-a - b - c = 9$
$-4a + 3b + c = 23$
$-6a + 4b + 4c = 24$

39) The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 14 vans and 4 buses with 258 students. High School B rented and filled 11 vans and 12 buses with 557 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

40) Find the value of two numbers if their sum is 15 and their difference is 1.

41) The sum of two numbers is 23. Their difference is 5. Find the numbers.

42) The water park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 8 vans and 8 buses with 472 students. High School B rented and filled 8 vans and 7 buses with 425 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

43) Cody and Pranav each improved their yards by planting hostas and ivy. They bought their supplies from the same store. Cody spent $176 on 12 hostas and 8 pots of ivy. Pranav spent $134 on 12 hostas and 2 pots of ivy. What is the cost of one hosta and the cost of one pot of ivy?

44) Arjun and Kim are selling cheesecakes for a school fundraiser. Customers can buy New York style cheesecakes and strawberry cheesecakes. Arjun sold 14 New York style cheesecakes and 5 strawberry cheesecakes for a total of $220. Kim sold 7 New York style cheesecakes and 6 strawberry cheesecakes for a total of $166. What is the cost each of one New York style cheesecake and one strawberry cheesecake?

45) The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 6 vans and 8 buses with 540 students. High School B rented and filled 5 vans and 10 buses with 630 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

46) The school that Alberto goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 10 senior citizen tickets and 6 child tickets for a total of $114. The school took in $126 on the second day by selling 14 senior citizen tickets and 6 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

47) Find the value of two numbers if their sum is 17 and their difference is 3.

48) Shreya and Ryan are selling cookie dough for a school fundraiser. Customers can buy packages of chocolate chip cookie dough and packages of gingerbread cookie dough. Shreya sold 7 packages of chocolate chip cookie dough and 5 packages of gingerbread cookie dough for a total of $216. Ryan sold 14 packages of chocolate chip cookie dough and 14 packages of gingerbread cookie dough for a total of $504. What is the cost each of one package of chocolate chip cookie dough and one package of gingerbread cookie dough?

49) Nicole and Shayna are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of shiny wrapping paper. Nicole sold 11 rolls of plain wrapping paper and 2 rolls of shiny wrapping paper for a total of $80. Shayna sold 7 rolls of plain wrapping paper and 10 rolls of shiny wrapping paper for a total of $208. What is the cost each of one roll of plain wrapping paper and one roll of shiny wrapping paper?

50) The school that Castel goes to is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 10 senior citizen tickets and 8 child tickets for a total of $154. The school took in $119 on the second day by selling 3 senior citizen tickets and 8 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

51) Dan and Willie each improved their yards by planting rose bushes and ornamental grass. They bought their supplies from the same store. Dan spent $58 on 4 rose bushes and 6 bunches of ornamental grass. Willie spent $110 on 8 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?

52) Danielle and Eugene are selling cookie dough for a school fundraiser. Customers can buy packages of white chocoloate chip cookie dough and packages of double chocolate cookie dough. Danielle sold 3 packages of white chocoloate chip cookie dough and 11 packages of double chocolate cookie dough for a total of $109. Eugene sold 9 packages of white chocoloate chip cookie dough and 13 packages of double chocolate cookie dough for a total of $167. Find the cost each of one package of white chocoloate chip cookie dough and one package of double chocolate cookie dough.

53) Find the value of two numbers if their sum is 26 and their difference is 2.

Answers to Unit 4 review (ID: 1)

1) $(-1, 3)$ 2) $(2, -4)$ 3) $(-1, 2)$ 4) $(-4, -1)$
5) Infinite number of solutions 6) $(-8, -8)$ 7) $(8, -2)$
8) $(2, 1)$ 9) $(6, -5)$ 10) $(-4, 5)$ 11) No solution
12) $(-3, 2)$ 13) $(-3, -6)$ 14) $(1, -2)$ 15) $(5, -6)$
16) $(0, -3)$ 17) $(8, -7)$ 18) $(2, 2)$ 19) $(-4, 6)$
20) $(3, 3)$ 21) $(-7, 0)$ 22) $(7, -7)$ 23) $(0, -3)$
24) $(-1, 1)$ 25) $(1, 1)$ 26) $(10, -4)$ 27) $(-4, -7)$
28) $(-2, 1)$ 29) $(6, 2)$ 30) $(6, 6)$ 31) $(-4, 5, -2)$
32) $(-1, 4, 0)$ 33) $(-4, 1, 1)$ 34) $(-4, -2, 2)$ 35) No unique solution
36) $(5, 1, -4)$ 37) $(5, -1, -1)$ 38) $(-6, 1, -4)$ 39) Van: 7, Bus: 40
40) 7 and 8 41) 9 and 14 42) Van: 12, Bus: 47
43) hosta: \$10, pot of ivy: \$7
44) New York style cheesecake: \$10, strawberry cheesecake: \$16
45) Van: 18, Bus: 54 46) senior citizen ticket: \$3, child ticket: \$14 47) 7 and 10
48) package of chocolate chip cookie dough: \$18, package of gingerbread cookie dough: \$18
49) roll of plain wrapping paper: \$4, roll of shiny wrapping paper: \$18
50) senior citizen ticket: \$5, child ticket: \$13 51) rose bush: \$10, bunch of ornamental grass: \$3
52) package of white chocoloate chip cookie dough: \$7, package of double chocolate cookie dough: \$8
53) 12 and 14