DSPM 0800 Name:_____
Chapter 6 Review Worksheet

Determine whether each ordered pair is a solution to the given system of equations.

1. $(22.8,-64.3)$; $y=-3.5x+15.5$, $15x+10y=-301$

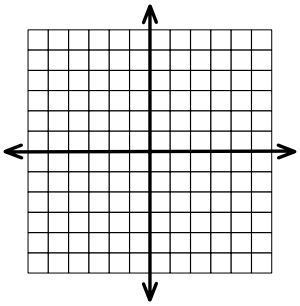
2. $\left(\frac{5}{6},-\frac{1}{6}\right)$; $4x+2y=3$, $x-y=1$

3. $(-5,-3)$; $x+10=5$, $3y+11=2$

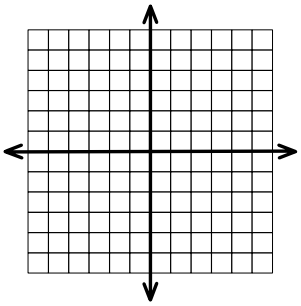
4. $(-2,-3)$; $2x+5y=-19$, $3x-7y=10$

Solve each system of linear equations graphically.

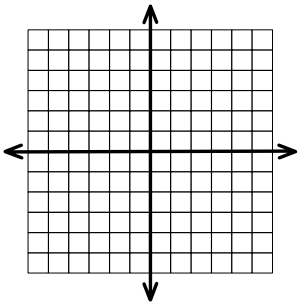
5. $y=2x+10$, $3x+y=-10$



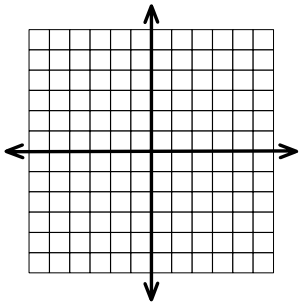
6. $2(x-1)-4=0$, $2x+y=3$



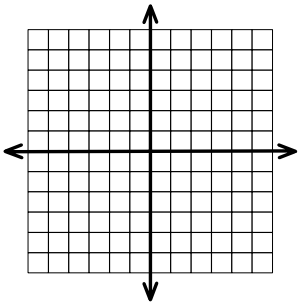
7. $y=5x-9$, $4x+8y=16$



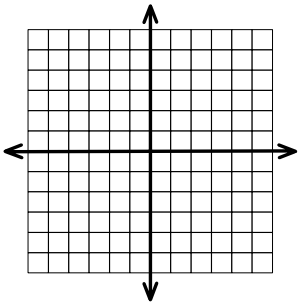
8. $2y=x+6$, $y=\frac{1}{2}x-5$



9. $4x+y=-3$, $4x+2y=y-3$



10. $2x+3y=6$, $x+y=1$



Solve each system of linear equations by using the substitution method.

11. $x+6y=-2$
$x-2y=1$

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

13. $x+7y=3$
$4x+y=9$

14. $y=4x-7$
$2y+12=4x+y+5$

15. $y=-2x+7$
$2x+y=0$

16. $2y+2=y$
$y=-x+1$

Solve each system of linear equations by using the elimination method.

17. $3x+y=4$
$12x+4y=9$

18. $y=\frac{4}{5}x-6$
$5y+2=4(x-7)$

19. $1.25x+3.5y=-25$
$4.5x+2.8y=8$

20. $5x+3y=9$
$x-y=6$

21. $\frac{1}{2}x+\frac{4}{5}y=-13$
$\frac{1}{3}x-\frac{2}{5}y=10$

22. $4x+8y=68$
$5x-3y=-6$

Solve each system of linear equations.

23. $y=\frac{4}{7}x+2$
$x-3y=4$

24. $0.55x-0.68y=48$
$-0.51x+0.68y=0$

25. $2x+y=0$
$x+4y=3$

26. $3y+7=2y+5$
$y+9=7$

27. $y=\frac{3}{4}x+14$
$y=-\frac{2}{3}x-3$

28. $5x+6y=669$
$x-2y=1705$

29. $3x-5y=11$
$4x+2y=13$

30. $3x+4=2x$
$x+7=3$

31. $\frac{1}{2}x+\frac{1}{3}y=3$
$\frac{1}{4}x-\frac{2}{5}y=-7$

Write and solve a system of linear equations.

32. Dave can lease a car from company A for $150.00 per week plus $0.25 per mile. He can lease the same car from company B for $175.00 per week plus $0.20 per mile. How many miles must he drive during the week in order for the car from company B to be more economical?

33. Julia invested her salary from her last blockbuster movie in two simple-interest funds. Her salary was $10,000,000. One fund paid 4.5% simple interest and the other fund paid 6% simple interest. At the end of the year, Julia received a total of $487,500 in interest payments. How much did she invest in each fund?

34. An alloy containing 15% brass is to be combined with an alloy containing 35% brass to form an alloy containing 27% brass. How much of each alloy should be combined to make 200 pounds of the 27% brass alloy?

35. A landlord has 8 one-bedroom apartments and 12 two-bedroom apartments to rent. She wants the two-bedroom apartments to rent for $150 more than the one-bedroom apartments. She wants the total monthly rental income to be $7300. How much should she charge as the monthly rental for each type of apartment?

36. Two angles are supplementary. The second angle must measure 10 degrees more than the first angle. What does the smaller angle measure?

37. A survey of 700 people was conducted. Forty percent of the men surveyed supported the issue in question, while 70 percent of the women favored it. A total of 400 people favored the issue. How many men and how many women were surveyed?

38. Two angles are complementary. One angle measures 12 degrees more than three times the other angle. Find the measures of the angles.

39. A coffee shop blends gourmet coffee, which sells for $8.50 per pound, with gourmet Dutch chocolate, which sells for $12.50 per pound. The shop makes a mocha blend that sells for $9.50 per pound. How much coffee should be mixed with how much chocolate to make 50 pounds of the blend?

40. It took Kenny 3 hours to pedal a tandem bicycle built for two to where Dolly was waiting. Dolly's pedaling increased their speed by 4 mph, and the return trip took them only 2 hours. How fast could Kenny pedal alone, and how far did he have to go to find Dolly?

41. A chemist needs 100 cc of a 30% nitric acid solution. She has a 50% solution and a 10% solution in stock. How many cc of each must she mix in order to make the required solution?

42. Tommy drives his motorboat 36 miles upriver for 36 minutes ($\frac{3}{5}$ hour) and returns to his starting point in 30 minutes. Determine the average speed of his boat in still water and the average speed of the river current.

43. A United Airlines flight departs Boston's Logan International Airport and arrives in Los Angeles 5 hours and 45 minutes later. During the same time frame, a United Airlines flight departs Los Angeles International Airport and arrives in Boston 5 hours later. Assuming that the planes travel at the same average speeding still air, determine that average speed, as well as the average speed of the wind caused by the jet stream. The distance between the two cities is 2600 miles.