Name

KEY\_



Solve the equations if possible. Determine if the equation has *no solution, all real numbers* are solutions, or one solution (if the equation has one solution, give the solution).

15) 12 = -x - (-4) -816) 5x - 7(3 - 2x) = 3617)  $\frac{4}{7}y - 21 = 7$ 49 18) y + 23 = 3(2y + 1)19) 14 - (6 - 3x) = 4x - x No solution 20)  $\frac{3x - 36}{6} = -9$ 21) 2(y - 8) + 7 = 5(y + 2) - 3y - 19 All Real Numbers 22)  $\frac{2}{3}(12m + 6) = 4(3m + 5) - 4$ 23) Solve the proportion.  $\frac{2}{x - 3} = \frac{5}{x + 1} - \frac{17}{3}$ 24) Solve -3x + 9y + 9 = -3 for y.  $y = \frac{1}{3}x - \frac{4}{3}$ 25) if  $f(x) = 2x^2 - 21$ , find f(-3). f(-3) = -3

- Adult tickets for a concert cost \$8 each and students tickets cost \$5 each. A total of 55 tickets were sold worth \$365. How many adult and student tickets were sold?
   30 adult tickets and 25 student tickets
- 27) Tom and Jaime earned 385 points in a video game. Tom earned 5 more than 3 times as many points as Jaime. How many points did Tom earn in the video game? 290 points
- 28) Find the x-intercept and the y-intercept of the equation 5x 6y = 30. Then graph.
  x-intercept: (6, 0) y-intercept: (0, -5); Graph in appendix

29) Make a table of values for y =  $\frac{2}{3}x$  - 5. Use the values -3, 0, 3, for x. Then graph. See appendix

**Graph.** See appendix for 30 - 33 30)  $y = -\frac{2}{3}x + 4$  31) y = -4 32) -3x + 6y = -18 33) x = 734) Write the equation of the line.  $y = \frac{2}{3}x + 2$ 



Find the slope of the line that passes through each pair of points.

36) (5, 3), (-1, 3) 37) (5,7), (-2, -3) 38) (4, 2), (4, 5) 35) (2, -1), (5, -3) undefined zero 39) Find the value of r so that the line through (8, r) and (4, 5) has a slope of -4. *r* = -11 Write a linear equation in *slope-intercept* form. Identify the slope and y-intercept. 40) 3x - 2y = 1241) -16x - 4y = -28 $y = \frac{3}{2}x - 6$ v = -4x + 7Write and equation for each of the following lines in *slope - intercept* form. Passes through the 42) Passes through the point 43) points (-4, -2) and (4, 0). (-3, 5) with a slope of -1.  $y = \frac{1}{4}x - 1$ y = -x + 2 $y = \frac{1}{4}x - 1$ 45) Write y - 2 =  $-\frac{2}{5}(x - 8)$ Write y + 4 = 3(3x + 3)44) in slope-intercept form. in standard form. y = 9x + 52x + 5y = 26Write the point-slope form of an equation for the line that passes through the 46) point (4, -9) with slope of  $\frac{1}{5}$ .  $y + 9 = \frac{1}{r}(x - 4)$ Write the slope-intercept form of an equation for the line that passes through the point 47) (-1, 2) and is parallel to the graph of y = 2x - 3. y = 2x + 4 Write the slope-intercept form of an equation for the line that passes through the 48) point (6, -2) and is perpendicular to the graph of y =  $\frac{3}{5}x - 4$ .  $y = -\frac{5}{2}x + 8$ 49) You want to hire a D.J. for a party. There is an initial fee of \$75, plus \$30 per hour. Write a linear equation for the situation where y represents the cost of the D.J. and x

represents the number of hours. What is the cost for 4 hours?y = 30x + 75; 4 hours cost \$195

Appendix

Graph each system of equations. Then determine whether the system has no solution, infinitely many solutions or one solution. If the system has one solution, name it. Write the answer on the answer line below the graph.



54) Solve the system of equation by ELIMINATION. 2x - 15y = -10 ; -4x + 5y = -30

$$-15y = -10$$
;  $-4x + 5y$   
(10,2)

Solve each system of equations by the method of your choice. 55) x + y = 3; x + 2y = 4(2,1) 56) -13 = 4x - 3y; 5x + 2y = 1(-1,3)

## Solve each of the following word problems by first writing a system of equations.

57) Charlie is three years younger than twice Alan's age. Together they are 39 years old. How old is each person?

Variables \_let x= Charlie's age ; let y = Alan's age Verbal Model Alan's age times two minus three equals charlie's age Equation 2y - 3 = xVerbal Model Charlie's age plus Alan's age equals thirty nine Equation x + y = 39Solve the system.

Answer: Alan is 14 years old and Charlie is 25 years old

Write an inequality that describes the graph.

Write an inequality and then solve.

59) The sum of twelve and a number is less than the sum of twice the number and negative eight. 12 + n < 2n + (-8)

<u>Solve:</u>

60) 
$$-12 \ge -\frac{3}{5}x - 18$$
 $x \ge -10$ 61)  $\frac{3}{7}(y - 14) > -5 + \frac{3}{7}y$ No Solution62)  $-2(x+4) > 3x + 17$  $x < -5$ 63)  $3a - 2(6a - 4) > 4 - (4a + 6)$  $a > 2$ 



 $\begin{array}{c} 68) \quad x+y+1 \\ 2x-3y \leq -6 \end{array} \\ 69) \quad 3x+3y+12 \\ 2x+2y < -1 \end{array} \\ \hline$ 



67) y > x + 2

y <u><</u> -2x - 1

