

## EXERCISES

Convert each equation to slope-intercept form and graph. Clearly mark at least three points on each line.

1.  $-5x + 2y = -8$

2.  $y - 8 = -3(x + 1)$

3.  $y = 1 + \frac{1}{2}(x + 4)$

4.  $x + 4y = 12$

5.  $4x - 3y = 6$

6.  $y = 2(x + 5) - 8$

7.  $4x = 8$

8.  $y = \frac{3}{4}(x + 8) - 9$

9.  $y + 6 = 3(x + 2)$

10.  $y - 11 = -\frac{5}{2}(x + 2)$

11.  $-x + y = -6$

12.  $-5y = 20$



13. Write a linear equation that is not in slope-intercept form. Convert it to slope-intercept form and graph it. Show that your linear equations are equivalent by substituting one point from your graph into both equations to show that they make each equation true.

14. Patti signed up for a cell phone plan that charges an initial monthly fee and a set rate per minute she talks on the phone each month. The equation she was given to calculate her total bill,  $y$ , was  $y = 0.1(x + 20) + 7$  where  $x$  represents the number of minutes she talks on the phone in one month.

a. Convert the equation into slope-intercept form.

b. What is Patti's initial fee each month?

c. What is her rate per minute?

d. Last month, Patti talked on the phone for 427 minutes. How much was her total bill for last month? Show all work necessary to justify your answer.

15. Is the point  $(-1, 4)$  on the line  $3x + 2y = 5$ ?

16. Is the point  $(6, 0)$  on the line  $y = -11 + 2(x - 1)$ ?

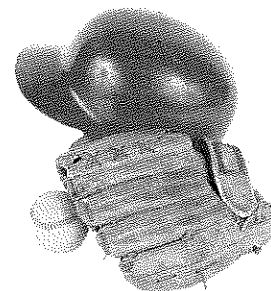
17. Is the point  $(0, 0)$  on the line  $y = -\frac{1}{2}(x + 4) + 2$ ?

18. Is the point  $(2, 10)$  on the line  $5x - y = 0$ ?

19. Is the point  $(-6, -2)$  on the line  $-x + 2y = -10$ ?

20. Is the point  $(-\frac{1}{2}, 3)$  on the line  $y = 2 - 2x$ ?

21. Vicky decided to buy tickets to the local Razorbacks baseball games. She learned she must first become a Razorback Club member for \$14 and then pay \$2.50 per ticket to attend the games. Vicky purchased 12 games plus the membership fee. The ticket sales person charged her \$34. Was she charged correctly? If not, how much should she have been charged? Use words and/or numbers to show how you determined your answer.



In each set of three linear equations, two are equivalent. Identify the one linear equation that is not equivalent to the others in the set. Show all work necessary to justify your answer.

22. 
$$\begin{cases} 2x + 4y = 8 \\ y = \frac{1}{2}x - 2 \\ y = -\frac{1}{2}x + 2 \end{cases}$$

23. 
$$\begin{cases} y = 3x - 4 \\ y = 3(x - 2) + 2 \\ -3x + y = 4 \end{cases}$$

24. 
$$\begin{cases} y = x - 1 \\ 5x + 5y = -5 \\ y = -(x + 6) + 5 \end{cases}$$

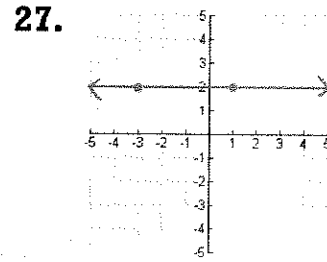
# REVIEW

Write an equation in slope-intercept form that is represented by the given information.

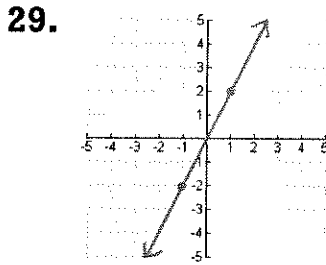
25.

$x$	$y$
0	6
1	4
2	2
3	0

26. has a slope of  $-2$  and  $y$ -intercept of  $1$

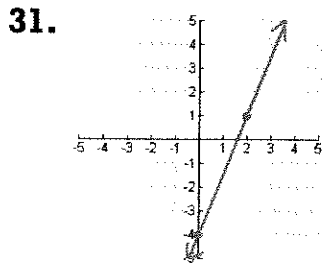


28. goes through the points  $(-3, 3)$  and  $(2, 8)$



30.

$x$	$y$
1	$-1$
3	9
6	24
8	34



32.

$x$	$y$
4	$-1$
4	3
4	5
4	7

33. has a slope of  $\frac{1}{3}$  and goes through the point  $(6, 1)$

## TIC-TAC-TOE ~ CAREERS USING ALGEBRA



Linear equations are an essential part of Algebra I. There are many career choices where knowledge of algebra is crucial. Research at least two different careers that require the use of algebra. Write a 1-2 page report about these careers.

Include the following in your report for each career:

- ◆ Description of the career
- ◆ How the career includes the use of algebra
- ◆ How much schooling is required for the career

