


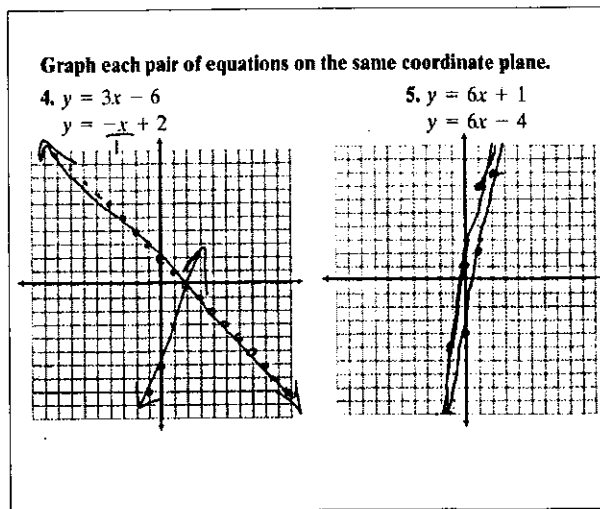
Page 374 Check Skills You'll Need Warm-ups

Solve each equation.

1. $2n + 3 = 5n - 2$
 $-2n \quad -2n$
 $3 = 3n - 2$
 $+2 \quad +2$
 $5 = 3n$
 $\frac{5}{3} = \frac{3n}{3} \quad \boxed{n = \frac{5}{3}}$

2. $8 - 4z = 2z - 13$
 $8 - 4z = 2z - 13$
 $-4z \quad -4z$
 $8 = 6z - 13$
 $+13 \quad +13$
 $21 = 6z$
 $\frac{21}{6} = \frac{6z}{6} \quad \boxed{\frac{7}{2} = z}$

3. $8q - 12 = 3q + 23$
 $-3q \quad -3q$
 $8q - 35 = 3q$
 $-8q \quad -8q$
 $-35 = -5q$
 $\frac{-35}{-5} = \frac{-5q}{-5}$
 $7 = q$

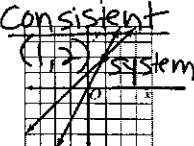



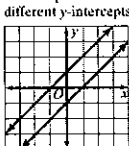
Lesson 7-1 WKbk p.119 Day 53
 Solving Systems by Graphing

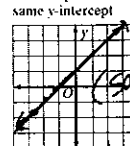
Lesson Objectives
 ▼ Solve systems by graphing
 ▼ Analyze special types of systems

NAEP 2005 Strand: Algebra
 Topics: Equations and Inequalities
 Local Standards:

Numbers of Solutions of Systems of Linear Equations

different slopes
Consistent

 The lines are **intersecting** so there is **one** solution. (x, y) the ordered pair where they intersect

same slope different y-intercepts

 The lines are **parallel** so there are **NO** solutions. **Inconsistent System**

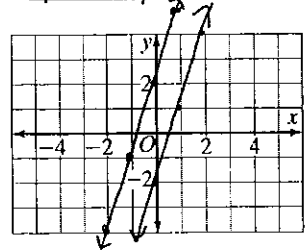
same slope same y-intercept

 The lines are **coinciding** so there are **infinitely many** solutions. **Dependent System**

Ⓔ Systems With No Solution Solve by graphing. $y = 3x + 2$
 $y = 3x - 2$

Graph both equations on the same coordinate plane.

$y = 3x + 2$ The slope is 3. The y-intercept is 2.
 $y = 3x - 2$ The slope is 3. The y-intercept is -2.

The lines are Parallel. There is NO solution.



④ **Systems With Infinitely Many Solutions** Solve by graphing.

$$-3x + 4y = 12 \rightarrow \frac{4y}{4} = \frac{-3x + 12}{4} \rightarrow y = -\frac{3}{4}x + 3$$

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

Graph both equations on the same coordinate plane.

$3x + 4y = 12$ The y -intercept is $\boxed{3}$. The x -intercept is $\boxed{4}$.

$y = -\frac{3}{4}x + 3$ The slope is $\boxed{}$. The y -intercept is $\boxed{}$.

The graphs are the same line. The solutions are an infinite number of ordered pairs (x, y) , such that $y = -\frac{3}{4}x + 3$.

Move to Textbook examples on page 377.

Is $(-1, 5)$ a solution of each system? Explain.

1. $x + y = 4$
 $-1 + 5 = 4$ ✓ **yes**

2. $y = -\frac{1}{5}x + 4$
 $5 = -\frac{1}{5}(-1) + 4$ **NO**
 $5 = \frac{1}{5} + 4$
 $5 = \frac{1}{5}$

Solve by graphing. Check your solution.

9. $-1 = \frac{1}{3} \cdot 6 + 1$
 $y = -\frac{1}{3}x + 1$
 $y = \frac{1}{3}x - 3$
 $-1 = \frac{1}{3} \cdot 6 - 3$
 $-1 = 2 - 3$ ✓

Solve by graphing. Check your solution.

10. $2 = \frac{1}{2} \cdot 2 + 1$
 $y = \frac{1}{2}x + 1$
 $y = -\frac{3}{4}x + 8$
 $2 = -\frac{3}{4} \cdot 2 + 8$

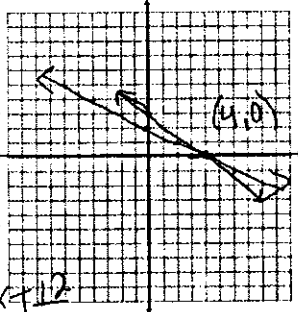
Solve by graphing. Check your solution.

11. $3x + 4y = 12$

$$\begin{array}{r} 2x + 4y = 8 \\ -2x \quad -2x \\ \hline 4y = -2x + 8 \\ \frac{4y}{4} = \frac{-2x + 8}{4} \\ y = -\frac{1}{2}x + 2 \end{array}$$

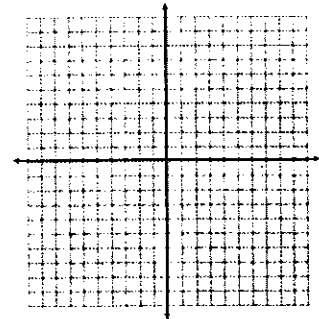
$$y = -\frac{1}{2}x + 2$$

$$\begin{array}{r} 3x + 4y = 12 \\ -3x \quad -3x \\ \hline 4y = -3x + 12 \\ \frac{4y}{4} = \frac{-3x + 12}{4} \\ y = -\frac{3}{4}x + 3 \end{array}$$



Solve by graphing. Check your solution.

12. $y = \frac{1}{2}x + 2$
 $y = -x + 5$



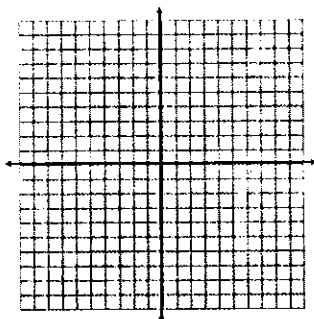
3. Suppose you have \$20 in your bank account. You start saving \$5 each week. Your friend has \$5 in his account and is saving \$10 each week. Assume that neither you nor your friend makes any withdrawals.

- a. After how many weeks will you and your friend have the same amount of money in your accounts?
- b. How much money will each of you have?

14. Suppose you have \$55 in your bank account. You start saving \$10 each week. Your friend has \$20 in her account and is saving \$15 each week. When will you and your friend have the same amount of money in your accounts?

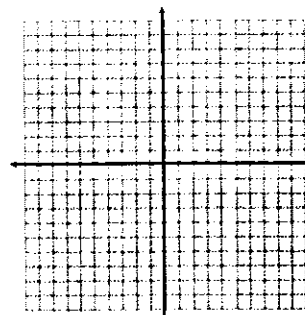
Graph each system. Tell whether the system has *no solution* or *infinitely many solutions*.

15. $y = -2x + 1$
 $y = -2x - 3$



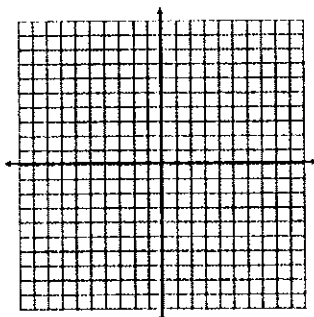
Graph each system. Tell whether the system has *no solution* or *infinitely many solutions*.

16. $x + 2y = 10$
 $2x + 4y = 10$



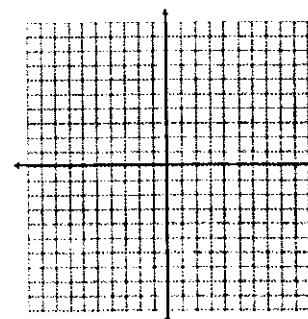
Graph each system. Tell whether the system has *no solution* or *infinitely many solutions*.

17. $y = 3x + 4$
 $-12x + 4y = 16$



Graph each system. Tell whether the system has *no solution* or *infinitely many solutions*.

18. $y = 2x + 6$
 $4x - 2y = 8$



Assignment:

Wkbk p. 369(1-25)
in the left column

All graphs must be
on graph paper!