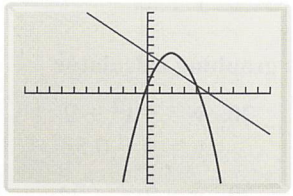
6 EXAMPLE Solve Using a Graphing Calculator

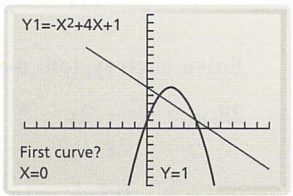
Solve the system of equations $y = -x^2 + 4x + 1$ and $y = -x + 5$ using a graphing calculator.

Step 1



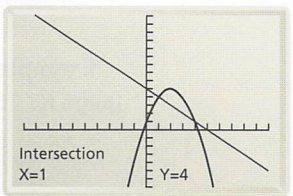
Enter $y = -x^2 + 4x + 1$ and $y = -x + 5$ into Y1 and Y2. Press GRAPH to display the system.

Step 2



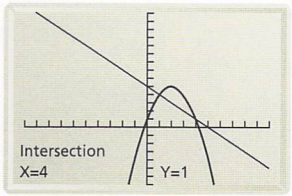
Use the CALC feature. Select 5: Intersect.

Step 3



Move the cursor close to a point of intersection. Press ENTER three times to find the point of intersection.

Step 4 Repeat Steps 2 and 3 to find the second intersection point.



The solutions of the system are (1, 4) and (4, 1).

Quick Check 6 Solve the system using a graphing calculator. $y = x^2 - 2$, $y = -x$

EXERCISES

For more exercises, see *Extra Skill and Word Problem Practice.*

Practice and Problem Solving

A Practice by Example

Examples 1 and 2 (pages NY 752 and NY 753)

GO for Help

Solve each system by graphing. Find the number of solutions for each system.

1. $y = x^2 + 1$, $y = x + 1$
2. $y = x^2 + 4$, $y = 4x$
3. $y = x^2 - 5x - 4$, $y = -2x$
4. $y = x^2 + 2x + 4$, $y = x + 1$
5. $y = x^2 + 2x + 5$, $y = -2x + 1$
6. $y = 3x + 4$, $y = -x^2$

Example 3 (page NY 753)

Solve each system using elimination.

7. $y = -x + 3$, $y = x^2 + 1$
8. $y = x^2$, $y = x + 2$
9. $y = -x - 7$, $y = x^2 - 4x - 5$
10. $y = x^2 + 11$, $y = -12x$
11. $y = 5x - 20$, $y = x^2 - 5x + 5$
12. $y = x^2 - x - 90$, $y = x + 30$

Example 4 (page NY 754)

Solve each system using substitution.

13. $y = x^2 - 2x - 6$, $y = 4x + 10$
14. $y = 3x - 20$, $y = -x^2 + 34$
15. $y = x^2 + 7x + 100$, $y + 10x = 30$
16. $-x^2 - x + 19 = y$, $x = y + 80$
17. $3x - y = -2$, $2x^2 = y$
18. $y = 3x^2 + 21x - 5$, $-10x + y = -1$