

ACTIVITY 1.6

Using Technology

Graphing Calculator Activity for use with Lesson 1.6

Solving an Inequality

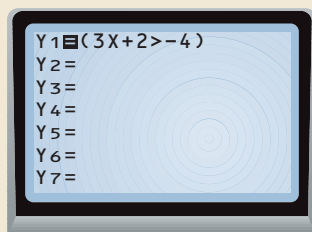
Most graphing calculators are able to evaluate whether a statement is true or false. If a statement is true, the calculator returns a 1; if a statement is false, it returns a 0. You can use this **Test** feature of a graphing calculator to solve a linear inequality.

EXAMPLE

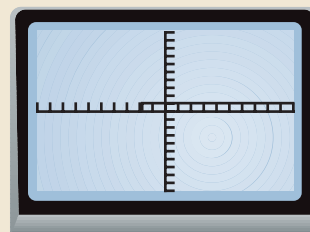
Use the **Test** feature of a graphing calculator to solve the inequality $3x + 2 > -4$.

SOLUTION

- 1** To solve the inequality, you must find the values of x for which the inequality is true. Enter the inequality as the *truth function* $y = (3x + 2 > -4)$, as shown in the calculator screen below.



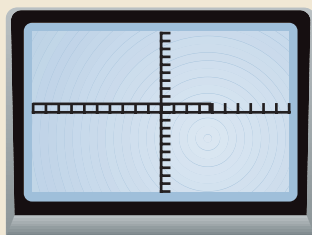
- 2** In the graph below you can see that the y -values are 1 for all x -values greater than -2 . So, the solutions are given by $x > -2$. Check several solutions in the original inequality.



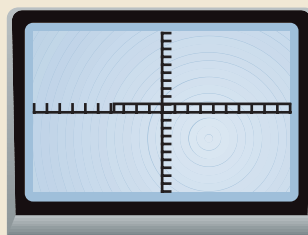
EXERCISES

In Exercises 1 and 2, the **Test** feature of a graphing calculator was used to create the graph. Use the graph to solve the inequality. Check several solutions in the original inequality.

1. $y = (4x - 5 \leq 11)$



2. $y = (5x + 6 \geq -14)$



Use the **Test** feature of a graphing calculator to solve the inequality. Check several solutions in the original inequality.

3. $2x - 7 > -1$

4. $4x + 2 < 18$

5. $0.5x + 2 \leq -1$

6. $-x + 5 \geq -3$

7. $-6x + 3 > -9$

8. $-0.5x - 1.5 \leq 3$

9. $5x < 4x + 6$

10. $4 - x \geq 2 - \frac{1}{2}x$

11. $3x - 4 \leq 2x + 5$

12. $2x - 1 < \frac{7}{3} + \frac{4}{3}x$

13. $5 - 5x > 12 - 4x$

14. $8 - 4x \leq 5 - x$

STUDENT HELP

KEYSTROKE HELP

See keystrokes for several models of calculators at www.mcdougallittell.com