Inequalities

Kim Mullins
Grade level: 5-8
Subject: mathematics
Time required: 90 minutes

Activity overview

This activity is designed to introduce students to the concept of inequalities. Students will discover how to graph inequalities on a number line.

Concepts

- ✓ Inequalities
- ✓ Equations
- ✓ Number lines

Teacher preparation

This activity is designed to introduce students to the concept of inequalities. The file *inequalities.tns* should be pre-loaded on the handheld.

Classroom management tips

Students can navigate through the student file independently or in small groups and answer the questions in the document.

TI-Nspire Applications

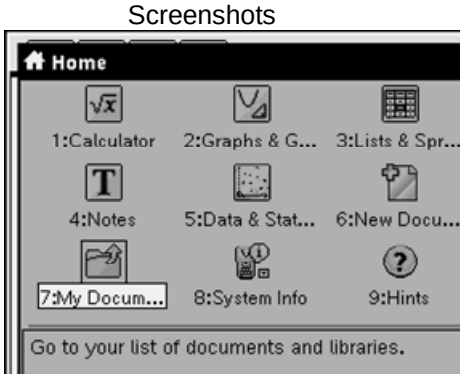
- ✓ Calculator
- ✓ Question
- ✓ Graphs and Geometry

Step-by-step directions

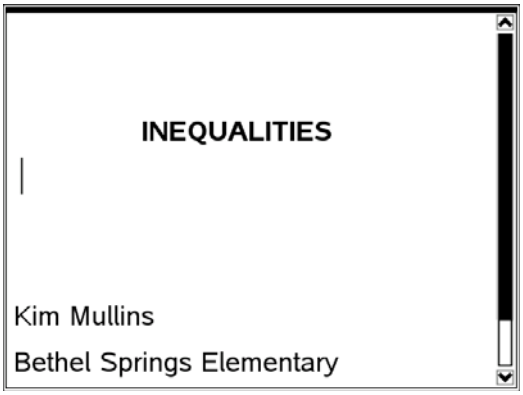
Steps:

1. From the home screen, choose My Documents and navigate to the appropriate folder containing the .tns file *inequalities*. Highlight the file and press enter. Choose whether or not to save changes to any previous document.

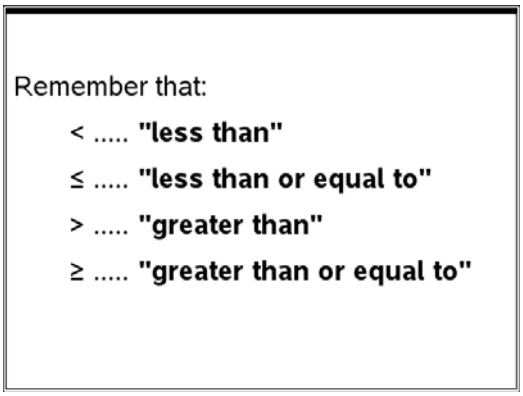
Screenshots



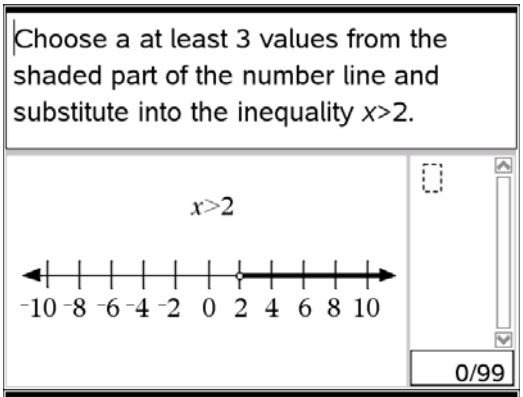
2. Page 1.1 is the title page for the activity. Press ctrl ▶ and ctrl ◀ to navigate through the document. Pressing ctrl ▲ will give you a thumbnail view of all pages in the document.



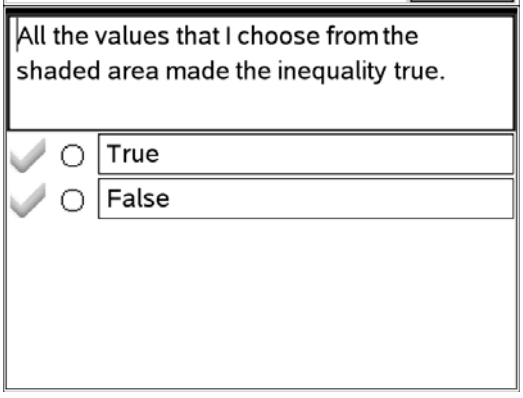
3. Remember these helpful hints.



4. Choose values that make the inequality true. You may need to press ctrl tab to get to the calculator.



5. Choose the correct answer. You may need to press ctrl tab to get to the answer.



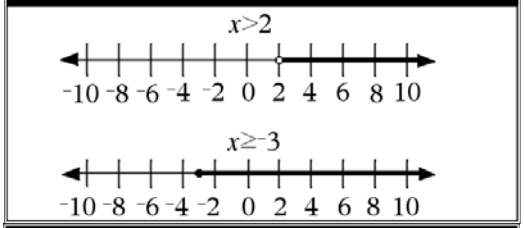
6. Helpful info.

These three values **satisfy** the inequality $x>2$ because they result in *true* statements when you substitute the appropriate values.

All x−values in the shaded part of the number line satisfy the inequality $x>2$ and are therefore members of the solution set.

7. Analyze the graphs.

Now compare the graph of the inequality $x>2$ to that of $x\geq -3$. How are the graphs and inequalities similar? How are they different?



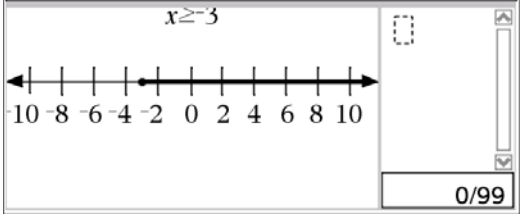
8. Remember this helpful tip.

On the next page, you will need to enter the "greater than or equal to" sign in the *Calculator* application.

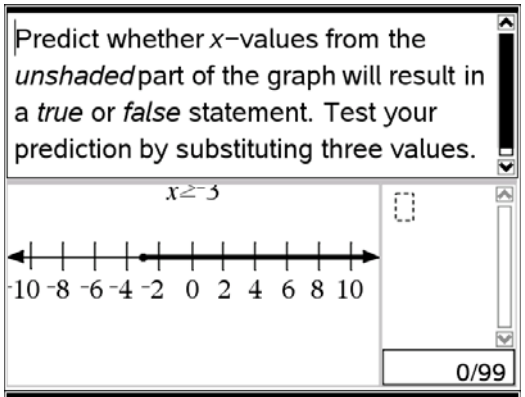
To do so, you can type ">" followed by "=" or simply press **CTRL+[greater than].**

9. Choose values that make the inequality true and or false. You may need to press ctrl tab to get to the calculator.

Predict whether x−values from the *shaded* part of the graph will result in a *true* or *false* statement. Test your prediction by substituting three values.



10. Choose values that make the inequality true and or false. You may need to press ctrl tab to get to the calculator.



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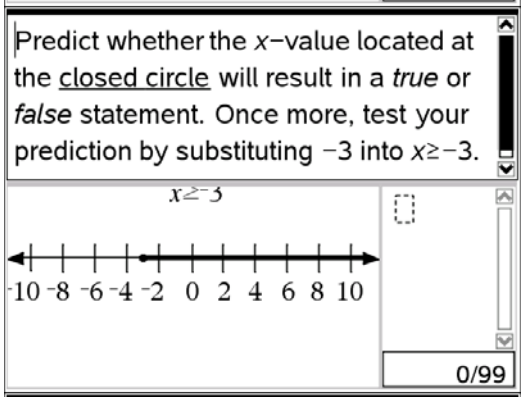
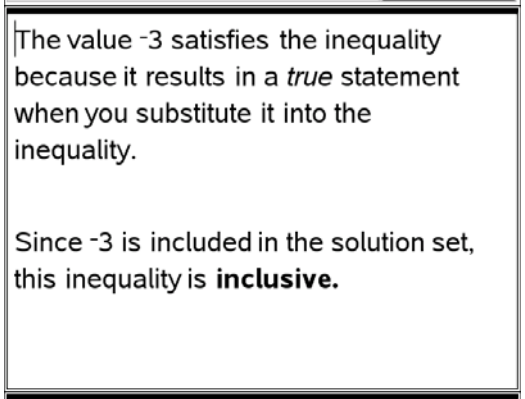
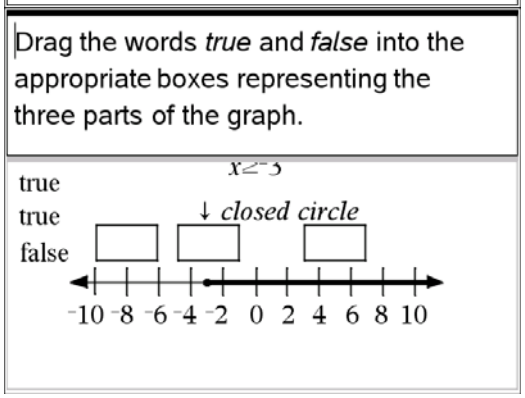


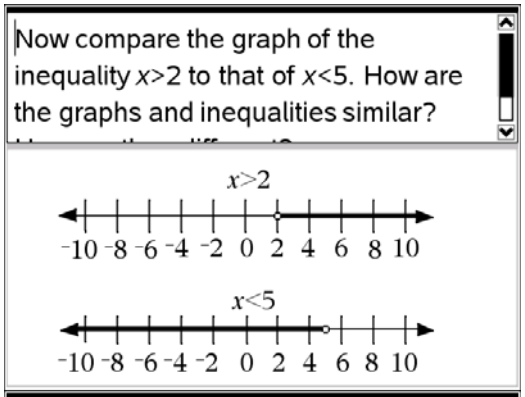
12. Read Carefully.



13. Drag the words to the correct boxes. You may need to press ctrl tab to get to the words. Place the ↖ cursor over the word. When you see a hand ☜, press the ⍾. The hand should close ✊ on the word and you can use the ◆▲▼ to move the word where needed.



14. Analyze the graphs.



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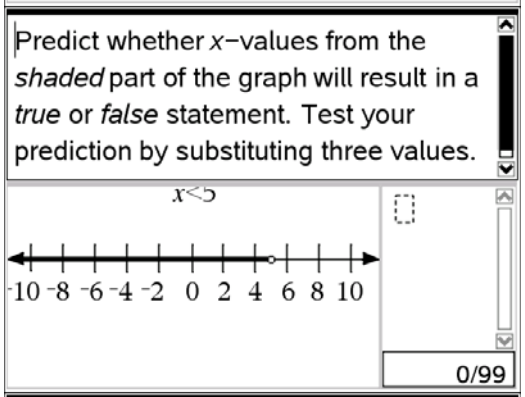

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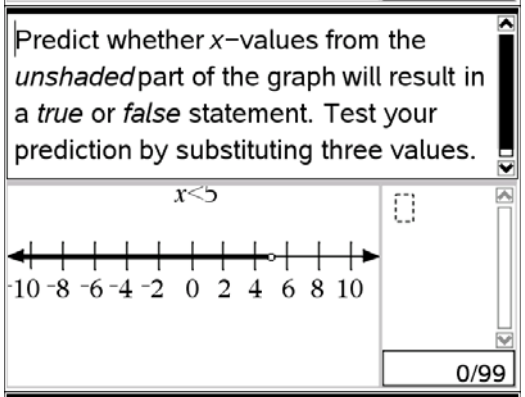

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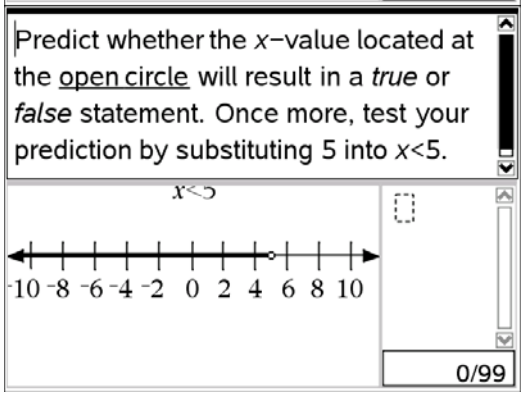

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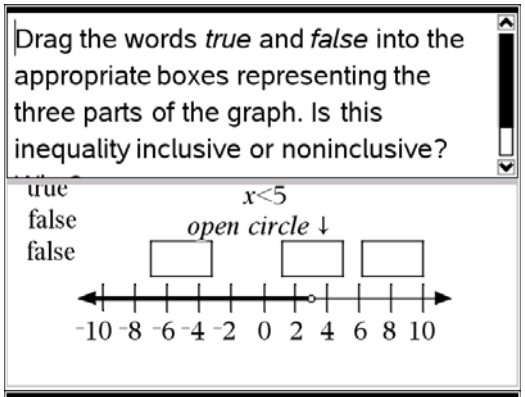

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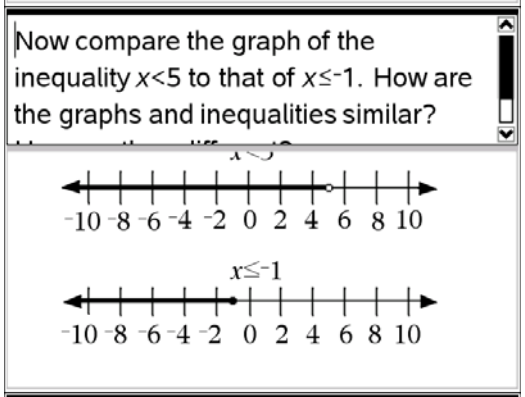
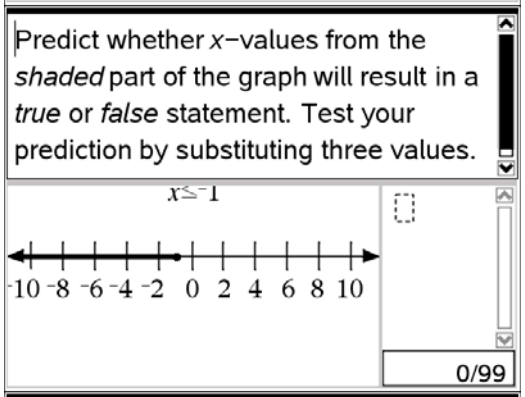


20. Choose values that make the inequality true or false. You may need to press ctrl tab to get to the calculator.



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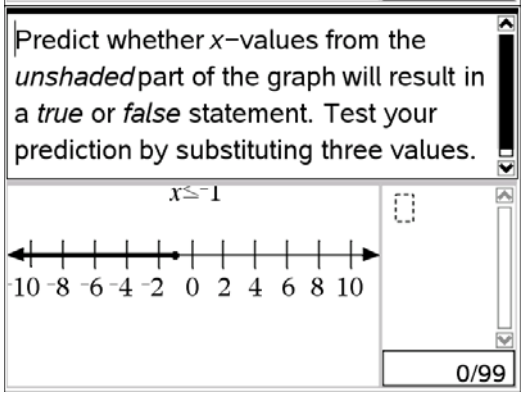

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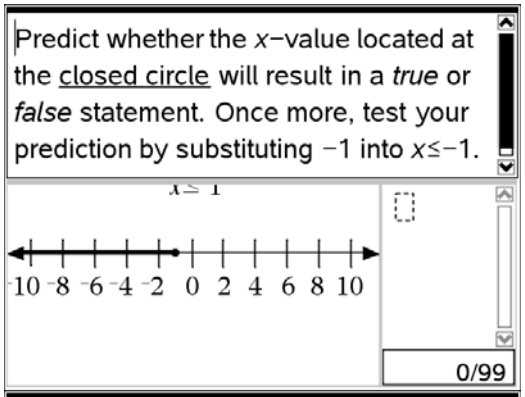

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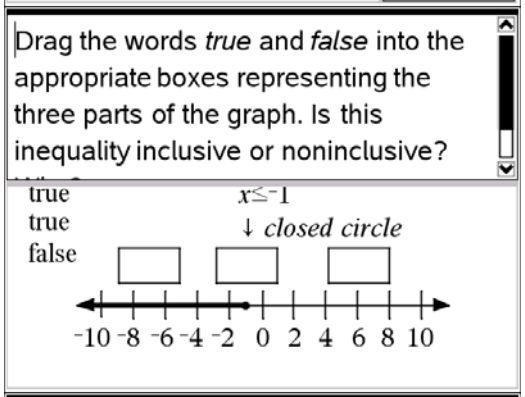
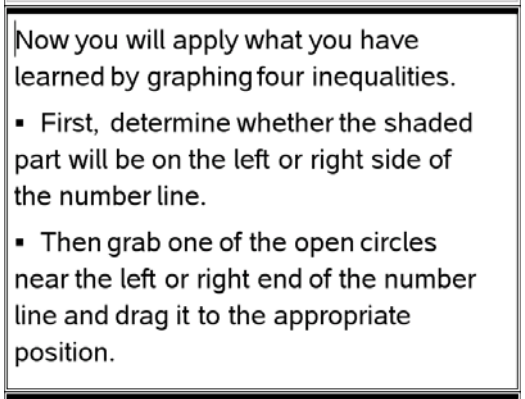
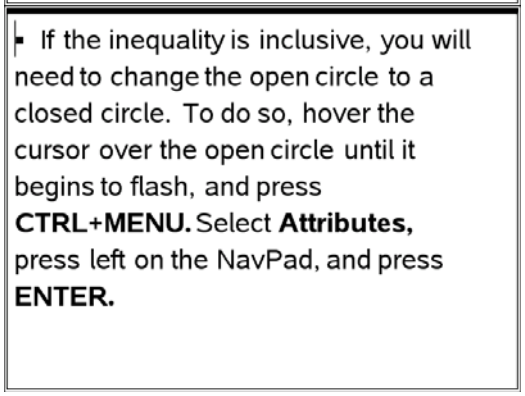


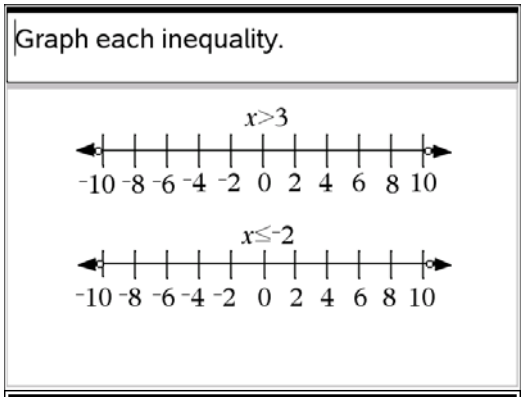
24. Good information.



25. Helpful Hints.



26. Determine whether the shaded part will be on the left or right side of the number line. Grab one of the open circles near the left or right end of the number line and drag it to the appropriate position.
If the inequality is inclusive, you will need to change the open circle to a closed circle. To do so, hover the ↖ cursor over the open circle until it begins to flash, and press (ctrl)(menu). Select Attributes, press ◀ (enter)(clear)



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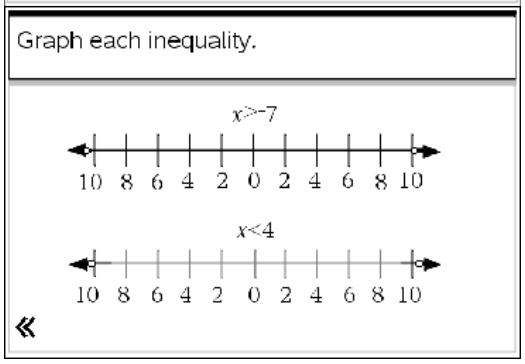

Student TI-Nspire Document
inequalities.tns.