

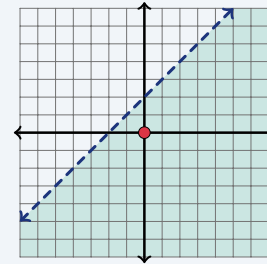
# Graphing Linear Inequalities

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 18

## Quick Review and Helpful Hints

To graph a two-variable inequality, first draw the boundary line: use a *dashed* line for  $<$  or  $>$  (the line is not included) and a *solid* line for  $\leq$  or  $\geq$ . Then *shade* the side that makes it true – test a point such as  $(0, 0)$ : if it works, shade its side. For  $y >$  or  $y \geq$  shade above the line; for  $y <$  or  $y \leq$  shade below.

▷ **Example:** Describe the graph of  $y < x + 2$ , and test whether  $(0, 0)$  is a solution. **Work:** The symbol is  $<$ , so the boundary  $y = x + 2$  is dashed. Test  $(0, 0)$ :  $0 < 0 + 2$  means  $0 < 2$ , which is true, so  $(0, 0)$  is a solution and you shade its side (below the line). ★ **Answer:** dashed;  $(0, 0)$  is a solution

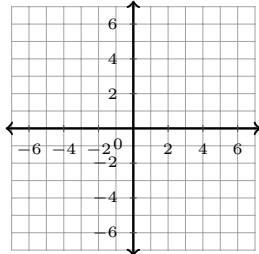


$y < x + 2$ : dashed line, shade below.

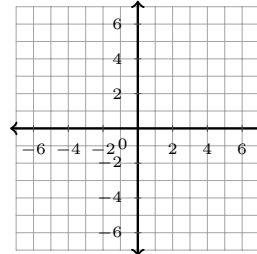
### Practice Problems

Graph each inequality on the coordinate plane, then answer the question about its solution region.

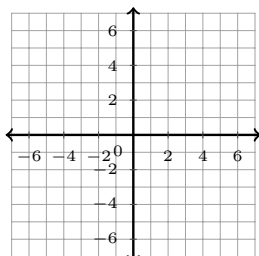
1. Graph  $y < x + 2$ . Is  $(0, 0)$  a solution?



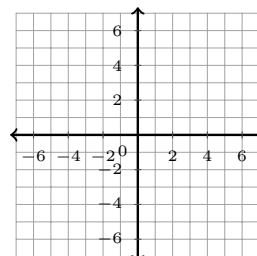
3. Graph  $y \leq x$ . Is  $(2, 1)$  a solution?



2. Graph  $y > 2x$ . Is  $(1, 5)$  a solution?



4. Graph  $y > x + 1$ . Is  $(0, 0)$  a solution?



5. Graph  $y \geq x$ . Is  $(3, 3)$  a solution?



\_\_\_\_\_

9. Graph  $y \geq x + 2$ . Is  $(-1, 0)$  a solution?



\_\_\_\_\_

6. Graph  $y < x$ . Is  $(1, 0)$  a solution?



\_\_\_\_\_

10. Graph  $y < x - 1$ . Is  $(4, 2)$  a solution?



\_\_\_\_\_

7. Graph  $y \leq 2x + 1$ . Is  $(0, 4)$  a solution?



\_\_\_\_\_

11. Graph  $y \leq -x + 3$ . Is  $(0, 0)$  a solution?



\_\_\_\_\_

8. Graph  $y > x + 2$ . Is  $(2, 5)$  a solution?

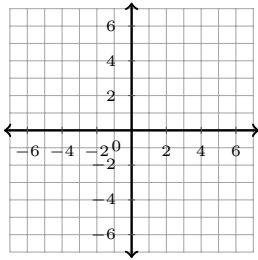


\_\_\_\_\_

12. Graph  $y \leq 2x + 1$ . Is the boundary solid or dashed?

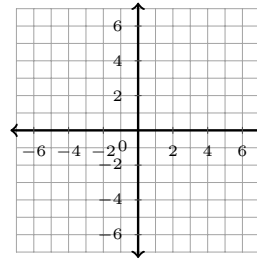


13. Graph  $y > x - 3$ . Is the boundary solid or dashed?



\_\_\_\_\_

14. Graph  $y < 2x$ . Shade above or below the line?



\_\_\_\_\_

◆ Word Problems

15. For the inequality  $y \geq 3x - 1$ , is the boundary line solid or dashed?

\_\_\_\_\_

17. For  $y \leq x$ , do you shade above or below the boundary line?

\_\_\_\_\_

16. Test the point  $(0, 0)$  in  $y > x + 4$ . Is it a solution?

\_\_\_\_\_

18. Is the point  $(2, 2)$  a solution of  $y \geq 2x - 2$ ?

\_\_\_\_\_



## Answer Keys

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

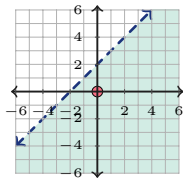


### Graph Answer Sketches

Shaded regions show the solutions. Dashed boundary lines are not included; solid boundary lines are included.

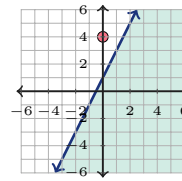
1.  $y < x + 2$

yes



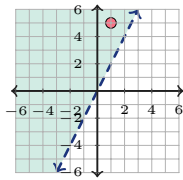
7.  $y \leq 2x + 1$

no



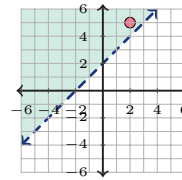
2.  $y > 2x$

yes



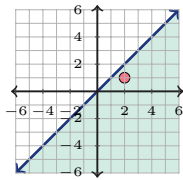
8.  $y > x + 2$

yes



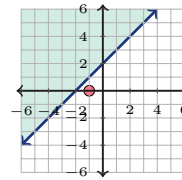
3.  $y \leq x$

yes



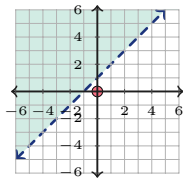
9.  $y \geq x + 2$

no



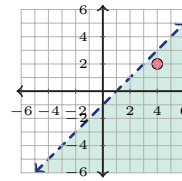
4.  $y > x + 1$

no



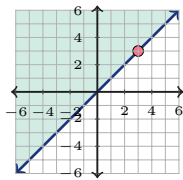
10.  $y < x - 1$

yes



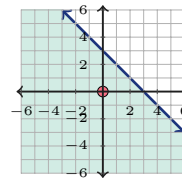
5.  $y \geq x$

yes



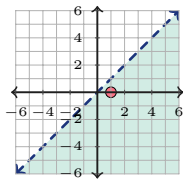
11.  $y \leq -x + 3$

yes



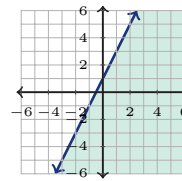
6.  $y < x$

yes



12.  $y \leq 2x + 1$

solid



13.  $y > x - 3$

dashed



14.  $y < 2x$

below



## Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Plug in the point: is  $0 < 0 + 2$ ? Since  $0 < 2$  is true,  $(0, 0)$  is a solution. So the final answer is yes.
2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $5 > 2(1) = 2$ ? Since  $5 > 2$  is true, yes. So the final answer is yes.
3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $1 \leq 2$ ? True, so yes. So the final answer is yes.
4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $0 > 0 + 1 = 1$ ? Since  $0 > 1$  is false, no. So the final answer is no.
5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $3 \geq 3$ ? Equal counts for  $\geq$ , so yes. So the final answer is yes.
6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $0 < 1$ ? True, so yes. So the final answer is yes.
7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $4 \leq 2(0) + 1 = 1$ ? Since  $4 \leq 1$  is false, no. So the final answer is no.
8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $5 > 2 + 2 = 4$ ? True, so yes. So the final answer is yes.
9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $0 \geq -1 + 2 = 1$ ? Since  $0 \geq 1$  is false, no. So the final answer is no.
10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $2 < 4 - 1 = 3$ ? True, so yes. So the final answer is yes.
11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check: is  $0 \leq -0 + 3 = 3$ ? True, so yes. So the final answer is yes.
12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Since the symbol is  $\leq$ , the boundary line is included, so draw it solid. So the final answer is solid.
13. Since the symbol is  $>$  (strict), the boundary is not included, so draw it dashed.
14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is For  $y <$ , the solutions lie below the boundary line, so shade below. So the final answer is below.
15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The symbol  $\geq$  includes the boundary, so the line is solid. So the final answer is solid.
16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check  $(0, 0)$  in  $y > x + 4$ : is  $0 > 0 + 4 = 4$ ? Since  $0 > 4$  is false, no. So the final answer is no.
17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is For  $y \leq$ , the solutions lie below the line, so shade below. So the final answer is below.
18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Check  $(2, 2)$  in  $y \geq 2x - 2$ : is  $2 \geq 2(2) - 2 = 2$ ? Equal counts for  $\geq$ , so yes. So the final answer is yes.



## Want Even More HiSET Math Practice?



### The Most Comprehensive HiSET Math Preparation Bundle

Prep books, workbooks, and full-length practice tests  
Complete review, detailed explanations, and realistic test practice



Scan Me

Prep Books  
Workbooks  
Practice Tests

**Important:** These HiSET Math resources are made for extra practice after the worksheet. Scan the QR code above for the complete HiSET Math preparation bundle.

#### Skill Review

- ✓ Builds number sense, algebra, geometry, and data skills
- ✓ Supports steady review before the HiSET test
- ✓ Great for tutoring, homework, and independent practice

**Build the foundation.**

#### Test Practice

- ✓ Full-length practice tests for realistic pacing
- ✓ Detailed answer explanations for every question
- ✓ Useful after students finish topic worksheets

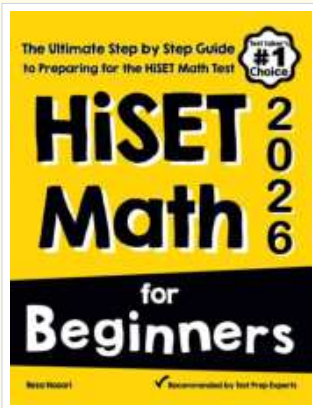
**Practice with purpose.**

#### Confidence

- ✓ Turns mistakes into targeted review
- ✓ Helps students see progress over time
- ✓ Keeps HiSET preparation organized and calm

**Move forward prepared.**

### STUDENT FAVORITE • Master HiSET Math From the Ground Up



\* **STUDENT'S #1 CHOICE**

Teacher-recommended • trusted HiSET prep

#### HiSET Math for Beginners

*The Ultimate Step-by-Step Guide to Preparing for the HiSET Math Test*

Written by a top math teacher and aligned with the latest HiSET Math test. From fractions and percents to algebra and geometry — explained the easy way.

- ✓ **Complete coverage** of every HiSET Math topic — perfect companion to these worksheets
- ✓ **Step-by-step explanations** with worked examples on every topic
- ✓ **QR codes in every chapter** for free video lessons & bonus practice
- ✓ **2 full-length practice tests** with detailed answer keys
- ✓ Perfect for self-study or the classroom

→ **DOWNLOAD INSTANTLY**



Scan Me

Instant download • any device

□ **FIND ON AMAZON**



Scan Me

Paperback on Amazon

Pair these free worksheets with *HiSET Math for Beginners* and you have a complete self-paced HiSET Math path — concept lessons, daily practice, and full exam-style reviews. → [EffortlessMath.com](https://www.EffortlessMath.com)