

# Inequalities and Constraints

Solving and interpreting inequalities, including compound cases.

Name \_\_\_\_\_ Date \_\_\_\_\_

32 main 2-up grid 11 pages visible side quests

## Completion Reward



Shown here as a small pack artifact, not a preview destination.

### 1. What does $x > 4$ mean?

- A.  $x$  is any number greater than 4
- B.  $x$  is 4 only
- C.  $x$  is any number less than 4
- D.  $x$  is any number at least 4

### 1.1. Solve $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

### 1.2. Solve $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

### 1.3. Which value satisfies $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

### 1.4. Which graph matches $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

### 1.5. Which statement matches $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

### 2. Which value satisfies $x \geq -2$ ?

- A. -3
- B. -2
- C. -5
- D. -7

### 2.1. Solve $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

### 2.2. Solve $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

### 2.3. Which value satisfies $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

### 2.4. Which graph matches $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

### 2.5. Which statement matches $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

### 3. Which inequality matches the phrase at least 8?

- A.  $x \leq 8$
- B.  $x > 8$
- C.  $x < 8$
- D.  $x \geq 8$

### 3.1. Solve $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

### 3.2. Solve $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

### 3.3. Which value satisfies $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

### 3.4. Which graph matches $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

### 3.5. Which statement matches $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

4. Which phrase matches  $n \leq 12$ ?

- A. n is no more than 12.
- B. n is at least 12.
- C. n is greater than 12.
- D. n is exactly 12 and nothing else.

4.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

4.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

4.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

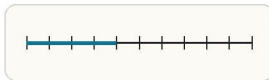
4.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

4.5. Which statement matches  $2 < x \leq 6$ ?

- A. x is between 2 and 6, including both ends
- B. x is between 2 and 6, including 6 but not 2
- C. x is less than 2 or greater than 6
- D. x must equal 4

5. Which inequality matches the number line?



A filled endpoint means the boundary value is included.

- A.  $x < -2$
- B.  $x \geq -2$
- C.  $x \leq -2$
- D.  $x > -2$

5.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

5.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

5.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

5.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

5.5. Which statement matches  $2 < x \leq 6$ ?

- A. x is between 2 and 6, including both ends
- B. x is between 2 and 6, including 6 but not 2
- C. x is less than 2 or greater than 6
- D. x must equal 4

6. Which inequality means at least 10 students?

- A.  $x > 10$
- B.  $x \leq 10$
- C.  $x \geq 10$
- D.  $x < 10$

6.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

6.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

6.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

6.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

6.5. Which statement matches  $2 < x \leq 6$ ?

- A. x is between 2 and 6, including both ends
- B. x is between 2 and 6, including 6 but not 2
- C. x is less than 2 or greater than 6
- D. x must equal 4

7. Solve  $x + 3 > 9$ . Answer as an inequality in  $x$ .

7.1. Solve  $x + 4 < 9$ .

7.2. Solve  $-2y > 8$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

7.3. Which value satisfies  $x \geq -2$ ?

7.4. Which graph matches  $x < 3$ ?

7.5. Which statement matches  $2 < x \leq 6$ ?

- A. -5
- B. -3
- C. -2
- D. -4

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

8. When do you reverse an inequality sign?

8.1. Solve  $x + 4 < 9$ .

8.2. Solve  $-2y > 8$ .

- A. When multiplying or dividing by a negative number
- B. When adding any number
- C. Whenever  $x$  appears on both sides
- D. Whenever the answer is a fraction

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

8.3. Which value satisfies  $x \geq -2$ ?

8.4. Which graph matches  $x < 3$ ?

8.5. Which statement matches  $2 < x \leq 6$ ?

- A. -5
- B. -3
- C. -2
- D. -4

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

9. Which inequality matches the number line?

9.1. Solve  $x + 4 < 9$ .

9.2. Solve  $-2y > 8$ .



The boundary value 3 is included, so the circle is closed.

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

- A.  $x > 3$
- B.  $x \leq 3$
- C.  $x \geq 3$
- D.  $x < 3$

9.3. Which value satisfies  $x \geq -2$ ?

9.4. Which graph matches  $x < 3$ ?

9.5. Which statement matches  $2 < x \leq 6$ ?

- A. -5
- B. -3
- C. -2
- D. -4

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

10. Which value satisfies  $-1 < x \leq 3$ ?

- A. 0
- B. -1
- C. 4
- D. 5

10.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

10.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

10.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

10.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

10.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

11. Which inequality matches the number line?



-1 is included and 4 is excluded, so the left endpoint is closed and the right is open.

- A.  $-1 < x \leq 4$
- B.  $-1 < x < 4$
- C.  $-1 \leq x \leq 4$
- D.  $-1 \leq x < 4$

11.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

11.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

11.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

11.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

11.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

12. Which inequality matches the number line?



The boundary value 2 is not included and the solutions extend to smaller numbers.

- A.  $x < 2$
- B.  $x \leq 2$
- C.  $x \geq 2$
- D.  $x > 2$

12.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

12.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

12.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

12.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

12.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

13. What is the best next step to solve  $-4x + 7 > -9$ ?

- A. Add  $4x$  to both sides.
- B. Subtract  $7$  from both sides.
- C. Divide both sides by  $-4$  right away.
- D. Reverse the inequality sign first.

13.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

13.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

13.3. Which value satisfies  $x \geq -2$ ?

- A.  $-5$
- B.  $-3$
- C.  $-2$
- D.  $-4$

13.4. Which graph matches  $x < 3$ ?

- A. Closed dot at  $3$ , arrow right
- B. Open dot at  $3$ , arrow left
- C. Closed dot at  $3$ , arrow left
- D. Open dot at  $3$ , arrow right

13.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between  $2$  and  $6$ , including both ends
- B.  $x$  is between  $2$  and  $6$ , including  $6$  but not  $2$
- C.  $x$  is less than  $2$  or greater than  $6$
- D.  $x$  must equal  $4$

14. A student solves  $-5x < 20$  and gets  $x < -4$ . What is wrong?

- A. You never divide both sides of an inequality.
- B. Dividing by  $-5$  should reverse the inequality, so the answer is  $x > -4$ .
- C. The answer should be  $x < 4$ .
- D. The variable should stay negative no matter what.

14.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

14.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

14.3. Which value satisfies  $x \geq -2$ ?

- A.  $-5$
- B.  $-3$
- C.  $-2$
- D.  $-4$

14.4. Which graph matches  $x < 3$ ?

- A. Closed dot at  $3$ , arrow right
- B. Open dot at  $3$ , arrow left
- C. Closed dot at  $3$ , arrow left
- D. Open dot at  $3$ , arrow right

14.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between  $2$  and  $6$ , including both ends
- B.  $x$  is between  $2$  and  $6$ , including  $6$  but not  $2$
- C.  $x$  is less than  $2$  or greater than  $6$
- D.  $x$  must equal  $4$

15. A student solves  $x/3 > -2$  and gets  $x > 6$ . What is wrong?

- A. The inequality sign should reverse because  $3$  is negative.
- B. Multiplying by  $3$  gives  $x > -6$ , not  $x > 6$ .
- C. You should divide by  $3$  again.
- D. The answer should be  $x < -6$ .

15.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

15.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

15.3. Which value satisfies  $x \geq -2$ ?

- A.  $-5$
- B.  $-3$
- C.  $-2$
- D.  $-4$

15.4. Which graph matches  $x < 3$ ?

- A. Closed dot at  $3$ , arrow right
- B. Open dot at  $3$ , arrow left
- C. Closed dot at  $3$ , arrow left
- D. Open dot at  $3$ , arrow right

15.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between  $2$  and  $6$ , including both ends
- B.  $x$  is between  $2$  and  $6$ , including  $6$  but not  $2$
- C.  $x$  is less than  $2$  or greater than  $6$
- D.  $x$  must equal  $4$

16. A student solves  $-3x \leq 12$  and gets  $x \leq -4$ . What is wrong?

- A. They should have added 3 instead.
- B. They should have multiplied by 12.
- C. They forgot to reverse the inequality sign.
- D. There is no mistake.

16.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

16.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

16.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

16.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

16.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

17. A student solves  $-2x > 6$  and writes  $x > -3$ . What is wrong?

- A. They should add 2 to both sides first
- B. They should reverse the inequality when dividing by -2
- C.  $x$  really is greater than -3
- D. The solution should be  $x = -3$  only

17.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

17.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

17.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

17.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

17.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

18. Solve  $-2x > 8$ . Answer as an inequality in  $x$ .

18.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

18.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

18.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

18.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

18.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

19. Solve  $7 - x < 3$ .

- A.  $x < 4$
- B.  $x \leq 4$
- C.  $x > 4$
- D.  $x \geq 4$

19.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

19.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

19.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

19.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

19.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

20. Solve  $5x + 2 > 3x + 10$ .

- A.  $x < 4$
- B.  $x > 4$
- C.  $x > -4$
- D.  $x < -4$

20.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

20.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

20.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

20.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

20.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

21. Solve  $3x - 5 \leq 10$ . Answer as an inequality in  $x$ .

21.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

21.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

21.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

21.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

21.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

22. Solve  $2x + 1 < x + 8$ . Answer as an inequality in  $x$ .

22.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

22.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

22.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

22.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

22.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

23. Solve  $7 - 2x \geq 1$ . Answer as an inequality in  $x$ .

23.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

23.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

23.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

23.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

23.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

24. Solve  $4 - 3x < 13$ . Answer as an inequality in  $x$ .

24.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

24.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

24.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

24.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

24.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

25. Solve  $1 < x + 4 < 7$ . Answer as an inequality in  $x$ .

25.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

25.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

25.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

25.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

25.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

26. Solve  $2x - 5 \leq 9$ .

26.1. Solve  $x + 4 < 9$ .

- A.  $x \leq 2$
- B.  $x \leq 7$
- C.  $x \geq 7$
- D.  $x \geq 2$

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

26.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

26.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

26.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

26.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

27. Which solved form is correct for  $-x \geq 4$ ?

27.1. Solve  $x + 4 < 9$ .

- A.  $x \geq -4$
- B.  $x \leq 4$
- C.  $x < -4$
- D.  $x \geq 4$

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

27.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

27.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

27.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

27.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

28. You need at least 35 points. You already have 11 points and earn 4 points per level. Which solution tells how many more levels  $x$  you need?

- A.  $x \leq 6$
- B.  $x \geq 5$
- C.  $x \leq 5$
- D.  $x \geq 6$

28.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

29. What is the best next step to solve  $-3 < 2x + 1 \leq 9$ ?

- A. Divide all three parts by 2 first.
- B. Reverse both inequality signs.
- C. Add 3 to the middle expression only.
- D. Subtract 1 from all three parts.

29.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

30. Solve  $5(x - 1) > 3x + 7$ . Answer as an inequality in  $x$ .

30.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

28.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

28.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

29.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

29.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

30.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

30.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

28.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

28.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

29.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

29.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

30.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

30.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

31. Which compound inequality is equivalent to  $2 < x - 1 \leq 8$ ?

- A.  $1 < x \leq 7$
- B.  $3 \leq x < 9$
- C.  $3 < x \leq 9$
- D.  $2 < x \leq 8$

31.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

31.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

31.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

31.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

31.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4

32. Which compound inequality is equivalent to  $-2 \leq 3x + 1 < 10$ ?

- A.  $-3 \leq x < 9$
- B.  $-1 < x \leq 3$
- C.  $-2 \leq x < 10$
- D.  $-1 \leq x < 3$

32.1. Solve  $x + 4 < 9$ .

- A.  $x < 5$
- B.  $x > 5$
- C.  $x < 13$
- D.  $x > 13$

32.2. Solve  $-2y > 8$ .

- A.  $y > -4$
- B.  $y < -4$
- C.  $y > 4$
- D.  $y < 4$

32.3. Which value satisfies  $x \geq -2$ ?

- A. -5
- B. -3
- C. -2
- D. -4

32.4. Which graph matches  $x < 3$ ?

- A. Closed dot at 3, arrow right
- B. Open dot at 3, arrow left
- C. Closed dot at 3, arrow left
- D. Open dot at 3, arrow right

32.5. Which statement matches  $2 < x \leq 6$ ?

- A.  $x$  is between 2 and 6, including both ends
- B.  $x$  is between 2 and 6, including 6 but not 2
- C.  $x$  is less than 2 or greater than 6
- D.  $x$  must equal 4