

2.1 Practice A

In Exercises 1–6, write the sentence as an inequality.

1. A number x is less than 2.
2. A number m plus 4 is greater than or equal to 7.
3. Ten is no less than a number q multiplied by 6.
4. Four times a number p is more than 22.
5. One-third of a number t is less than or equal to 5.
6. Six is more than the difference of a number d and 1.
7. There are 65 people in a restaurant. The restaurant has a maximum capacity of 84 people. Write an inequality that represents the number x of additional people who can enter the restaurant.

In Exercises 8–13, tell whether the value is a solution of the inequality.

8. $u + 7 < 4$; $u = 2$
9. $8 - x \geq 3$; $x = 2$
10. $5p \geq 24$; $p = 6$
11. $15 \leq 4w$; $w = 3$
12. $-3 > -\frac{x}{5}$; $x = 10$
13. $\frac{8}{y} \leq 6$; $y = 2$
14. The largest alligator ever caught in Mississippi weighed 727 pounds.
 - a. Write an inequality that represents the weights of every other alligator that has ever lived in Mississippi.
 - b. Is 750 pounds a solution to your inequality? Explain.

In Exercises 15–20, graph the inequality.

15. $x \geq 4$
16. $j < 3$
17. $m \leq -1$
18. $-3 < t$
19. $-5 \geq q$
20. $w < -4$

In Exercises 21–23, write and graph an inequality for the given solution set.

21. $\{x \mid x > 3\}$
22. $\{p \mid p \leq 0\}$
23. $\{w \mid w \geq -6\}$
24. To qualify for an award, a student volunteers no less than 5 hours each week at the local hospital. Write an inequality that represents how many hours the student volunteers each week.

2.1 Practice B

In Exercises 1–4, write the sentence as an inequality.

- A number x plus 10 is more than 2.
- Twelve is no less than the sum of a number n and 3.
- One-half of a number p is at least 100.
- Six is greater than or equal to the quotient of a number y and 2.5.

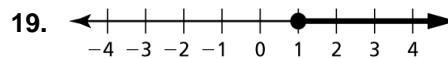
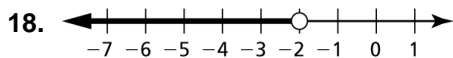
In Exercises 5–10, tell whether the value is a solution of the inequality.

- $-5 \leq -\frac{z}{3}$; $z = 2$
- $\frac{10}{r} \geq 1$; $r = 5$
- $21 \geq -4t + 3$; $t = -6$
- $-9 \div (3a) > -2$; $a = 3$
- $12 < \frac{18}{3g} + 12$; $g = -2$
- $\frac{4n}{8} + 3 \leq 2$; $n = 4$
- The winning swim team earned 245 points. The other teams earned at least 72 points less.
 - Write an inequality that represents the points that the other teams earned.
 - Was one of the teams able to earn 180 points? Explain.

In Exercises 12–17, graph the inequality.

- $-2 \geq k$
- $-4 < f$
- $m \leq -3$
- $-y < 3$
- $\frac{1}{3} \geq j$
- $n < -|-4|$

In Exercises 18 and 19, write an inequality that represents the graph.



- An upcoming marathon's qualifying time for males age 18–34 is 3 hours.
 - Write an inequality that represents how many hours a male runner could take to run a marathon in order to qualify.
 - Will a runner with a fastest marathon time of 3 hours 9 minutes qualify for the upcoming marathon? Explain.