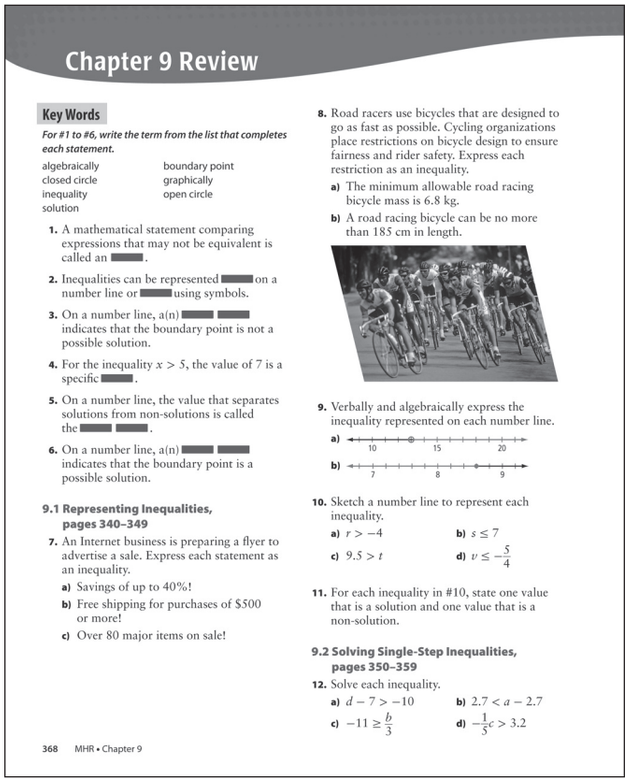
Chapter Review 9



Chapter 9 Review

Key Words

For #1 to #6, write the term from the list that completes each statement.

algebraically, boundary point, closed circle, graphically, inequality, open circle, solution

1. A mathematical statement comparing expressions that may not be equivalent is called an [redacted].
2. Inequalities can be represented [redacted] on a number line or [redacted] using symbols.
3. On a number line, a(n) [redacted] indicates that the boundary point is not a possible solution.
4. For the inequality $x > 5$, the value of 7 is a specific [redacted].
5. On a number line, the value that separates solutions from non-solutions is called the [redacted].
6. On a number line, a(n) [redacted] indicates that the boundary point is a possible solution.

9.1 Representing Inequalities, pages 340–349

7. An Internet business is preparing a flyer to advertise a sale. Express each statement as an inequality.
   a) Savings of up to 40%!
   b) Free shipping for purchases of $500 or more!
   c) Over 80 major items on sale!
8. Road racers use bicycles that are designed to go as fast as possible. Cycling organizations place restrictions on bicycle design to ensure fairness and rider safety. Express each restriction as an inequality.
   a) The minimum allowable road racing bicycle mass is 6.8 kg.
   b) A road racing bicycle can be no more than 185 cm in length.

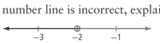
9. Verbally and algebraically express the inequality represented on each number line.
   a)
   b)
10. Sketch a number line to represent each inequality.
    a) $r > -4$ b) $s \leq 7$
    c) $9.5 > t$ d) $v \leq -\frac{5}{4}$
11. For each inequality in #10, state one value that is a solution and one value that is a non-solution.

9.2 Solving Single-Step Inequalities, pages 350–359

12. Solve each inequality.
    a) $d - 7 > -10$ b) $2.7 < a - 2.7$
    c) $-11 \geq \frac{b}{3}$ d) $-\frac{1}{5}c > 3.2$

13. Verify that the solution shown on each number line is correct. If a number line is incorrect, explain why.
    a) $-5x \geq -40$
    
    b) $-10 > 4x$
    
14. Tim earns $14.50/h working for his parents' business during the summer. His goal is to earn at least $600 each week. How many hours will Tim need to work each week to achieve his goal?
    a) Write an inequality to model the problem.
    b) Solve the inequality and interpret the solution.
15. Danielle is treating her friends to ice cream. Each scoop of ice cream costs $2.25. She wants to spend less than $30. How many scoops of ice cream can she buy and stay within her limit?

9.3 Solving Multi-Step Inequalities, pages 360–367

16. Verify whether the number line shows the correct solution for $11 - 3x > 17$. If the number line is incorrect, explain why.
    
17. a) Verify whether $x \geq 5$ is the correct solution for $5x + 4 \leq 6x - 1$.
    b) Describe a second method to verify the solution.
18. Solve each inequality and verify the solution.
    a) $\frac{x}{3} - 5 < 10$
    b) $9x + 30 > 13x$
    c) $3x \leq 8x + 5$
    d) $5x + 8 < 4x - 12$
    e) $17 - 3x \leq 7x + 3$
    f) $2(3x + 4) > 5(6x + 7)$
19. A student committee is planning a sports banquet. The cost of the dinner is $450 plus $24 per person. The committee needs to keep the total costs for the dinner under $2000. How many people can attend the banquet?
20. Greg is considering two different plans for music downloads. How many tracks purchased would make plan A the better option?

Plan A
$0.97 per track purchased plus $10.00/month unlimited PC streaming plus $15.00/month for downloading songs to an MP3 player

Plan B
$0.99 per track purchased plus $9.00/month unlimited PC streaming plus $144.00/year for downloading songs to an MP3 player

***MathLinks 9*, pages 368–369**

Suggested Timing
40–50 minutes

Blackline Masters
BLM 9–5 Section 9.1 Extra Practice
BLM 9–8 Section 9.2 Extra Practice
BLM 9–10 Section 9.3 Extra Practice

Planning Notes

Students can be encouraged to work on their own or with a partner to consider the meanings of the Key Words before completing #1 to 6.

Allow students to work independently to complete the remaining questions. If students encounter difficulties, provide an opportunity for them to discuss strategies with other students. Encourage them to refer to the information in their Foldable, their notebooks, and previously completed questions in the related sections of the student resource.

Students can be encouraged to work periodically with a classmate. Seeing different representations and alternative methods of solving inequalities will help strengthen their understanding.

Consider having students make a list of the questions that they found difficult. They can then use the list to help them prepare for the practice test.

Meeting Student Needs

- Some students may be encouraged to use manipulatives or a balance model to help them model problem situations or solve inequalities.
- Students who require more practice on a particular topic may refer to **BLM 9–5 Section 9.1 Extra Practice**, **BLM 9–8 Section 9.2 Extra Practice**, and **BLM 9–10 Section 9.3 Extra Practice**.

Assessment	Supporting Learning
Assessment *for* Learning	
Chapter 9 Review The Chapter 9 Review is an opportunity for students to assess themselves by completing selected questions in each section and checking their answers against the answers in the back of the student resource.	• Have students check the contents of the log entry, completed concept map, and What I Need to Work On section of their Foldable for areas of concern and do at least one question related to each listed item. • Have students revisit any section that they are having difficulty with prior to working on the chapter test.