1-6 Skills Practice
Solving Compound and Absolute Value Inequalities

Write an absolute value inequality for each graph.

1.

2.

3.

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7.

8.
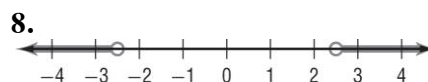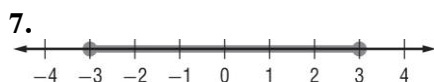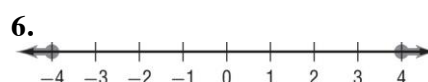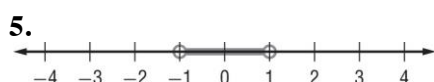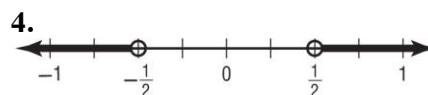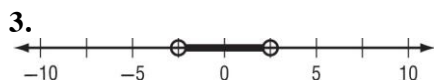
Solve each inequality. Graph the solution set on a number line.

9. $2c + 1 > 5$ or $c < 0$

10. $-11 \leq 4y - 3 \leq 1$

11. $10 > -5x > 5$

12. $4a \geq -8$ or $a < -3$

13. $8 < 3x + 2 \leq 23$

14. $w - 4 \leq 10$ or $-2w \leq 6$

15. $|t| \geq 3$

16. $|6x| < 12$

17. $|-7r| > 14$

18. $|p + 2| \leq -2$

19. $|n - 5| < 7$

20. $|h + 1| \geq 5$

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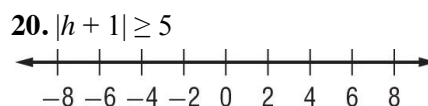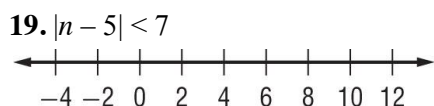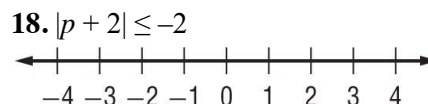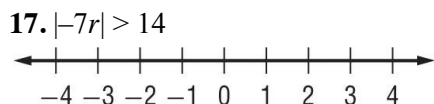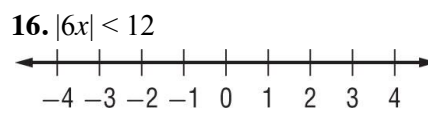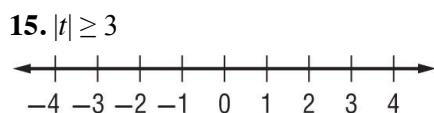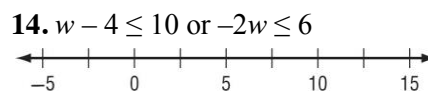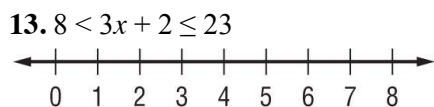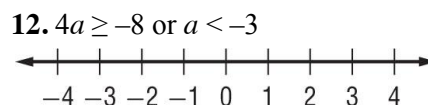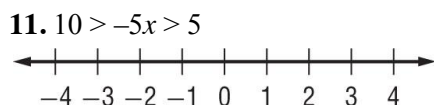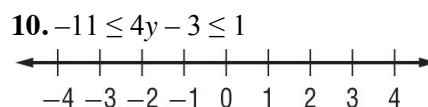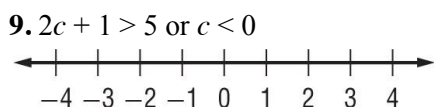
1-6 Word Problem Practice
Solving Compound and Absolute Value Inequalities

1. AQUARIUM The depth d of an aquarium tank for dolphins satisfies $|d - 50| < 5$. Write a compound inequality that describes the possible depth of the tank.

2. HIKING For a hiking trip, everybody must bring at least one backpack. However, because of space limitations, nobody is allowed to bring more than two backpacks. Let n be the number of people going on the hiking trip and b be the number of backpacks allowed. Write a compound inequality that describes how b and n are related.

3. CONCERT Jacinta is organizing a large fund–raiser concert in a space with a maximum capacity of 10,000 people. Her goal is to raise at least $100,000. Tickets cost $20 per person. Jacinta spends $50,000 to put the event together. Write and solve a compound inequality that describes N, the number of attendees needed to achieve Jacinta's goal.

4. NUMBERS Amy is thinking of two numbers a and b. The sum of the two numbers must be within 10 units of zero. If a is between –100 and 100, write a compound inequality that describes the possible values of b.

5. AIRLINE BAGGAGE Many airlines have a size limitation for carry–on luggage. The limitation states that the sum of the length, width, and height of the suitcase must not exceed 45 inches.
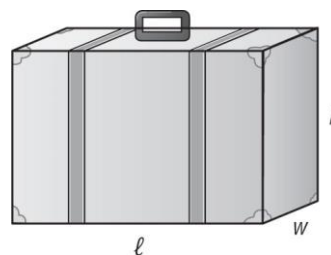
a. Write an inequality that describes the airlines' carry–on size limitation.

b. A passenger needs to bring a soil sample on the plane that is at least 1 cubic foot. The passenger is bringing it in a suitcase that is in the shape of a cube with side length n inches. Write an inequality that gives the minimum length for n.

c. Write a compound inequality for n using parts **a** and **b**. Find the maximum and minimum values for n.

Chapter **41** *Glencoe Algebra 2*