3-6 **Practice** *Form G*

Compound Inequalities

Write a compound inequality that represents each phrase. Graph the solutions.

1. all real numbers that are less than -3 or greater than or equal to 5

2. The time a cake must bake is between 25 minutes and 30 minutes, inclusive.

Solve each compound inequality. Graph your solutions.

3. $5 < k - 2 < 11$

4. $-4 > y + 2 > -10$

5. $6b - 1 \le 41$ or $2b + 1 \ge 11$

6. $5 - m < 4$ or $7m > 35$

7. $3 < 2p - 3 \le 12$

8. $3 > \dfrac{11 + k}{4} \ge -3$

9. $3d + 3 \le -1$ or $5d + 2 \ge 12$

10. $9 - c < 2$ or $-3c > 15$

11. $4 \le y + 2 \le -3(y - 2) + 24$

12. $5z + 3 < -7$ or $-2z - 6 > -8$

Write each interval as an inequality. Then graph the solutions.

13. $(-1, 10]$

14. $[-3, 3]$

15. $(-\infty, 0]$ or $(5, \infty)$

16. $[3, \infty)$

17. $(-\infty, 4)$

18. $[25, 50)$

3-6   **Practice** (continued)   *Form G*
Compound Inequalities

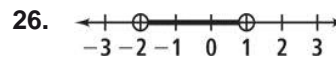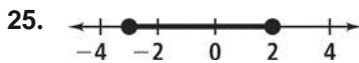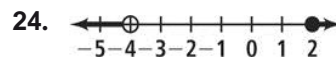**Write each inequality or set in interval notation. Then graph the interval.**

19. $x < -2$ **20.** $x > 0$

21. $x < -2$ or $x \geq 1$ **22.** $-3 \leq x < 4$

Write a compound inequality that each graph could represent.

23.

24.

25.

26.

Solve each compound inequality. Justify each step.

27. $3r + 2 < 5$ or $7r - 10 > 60$ **28.** $3 > -0.25v > -2.5$

29. $\dfrac{y-2}{2} - 5 \leq 3$ or $\dfrac{1+2y}{3} \geq 41$ **30.** $-\dfrac{3}{2} \leq \dfrac{5}{6}w - \dfrac{3}{4} \leq 2$

31. The absorbency of a certain towel is considered normal if the towel is able to hold between six and eight mL. The first checks for materials result in absorbency measures of 6.2 mL and 7.2 mL. What possible values for the third reading m will make the average absorbency normal?

32. A family is comparing different car seats. One car seat is designed for a child up to and including 30 lb. Another car seat is designed for a child between 15 lb and 40 lb. A third car seat is designed for a child between 30 lb and 85 lb, inclusive. Model these ranges on a number line. Represent each range of weight using interval notation. Which car seats are appropriate for a 32-lb child?

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