Name _____ Class _____ Date _____

3-6 Practice

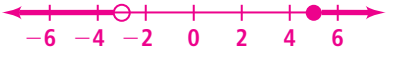
Form K

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.

$x <$ **−3** **or** $x \geq$ **5**



2. A certain recipe calls for a cake to bake between 25 minutes and 30 minutes, inclusive.

25 $\leq$ ***x*** $\leq$ **30**

Solve each compound inequality. Graph your solutions.

3. $5 < k - 2 < 11$ **$7 < k < 13$**

4. $-4 > y + 2 > -10$ **$-12 < y < -6$**

5. $6b - 1 \leq 213$ and $2b + 1 \geq 11$

$b \leq 35\frac{2}{3}$ or $b \geq 5$

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

$m > 1$

7. $3 > \frac{11 + k}{4} \geq -3$

$-23 \leq k < 1$

8. $4 \leq y + 12 \leq 24$

$-8 \leq y \leq 12$

Name _____ Class _____ Date _____

3-6 Practice (continued) *Form K*

Compound Inequalities

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

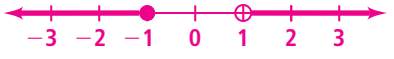
9. $(-2, 3]$

-2 [<] x [≤] 3

10. $[-2, 2]$

-2 [≤] y [≤] 2

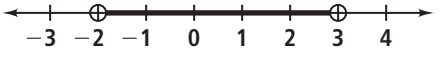
11. $(-\infty, -1]$ or $(1, \infty)$ $x \leq -1$ or $x > 1$



12. $[0, \infty)$ $x \geq 0$

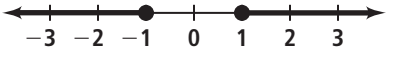
Write a compound inequality that each graph could represent.

13.



$-2 < x < 3$

14.



$x \leq -1$ or $x \geq 1$

Solve each compound inequality. Justify each step.

15. $3f + 3 < 6$ or $7f - 20 > 50$

$f < 1$ or $f > 10$

16. $3 > -0.5h > -3$

$-6 < h < 6$

17. $-\frac{1}{2} \leq \frac{5}{6}j - \frac{1}{3} \leq 2$

$-\frac{1}{5} \leq j \leq \frac{14}{5}$

18. $-\frac{3}{2} \leq \frac{5}{6}k$ or $k - \frac{3}{4} \geq 2$

$-\frac{9}{5} \leq k$

19. A family is comparing different DVD recorders. One unit can record up to eight hours. Another unit can record from two to 10 hours. A third unit can record up to 12 hours. Model these ranges on a number line. Represent each range of hours using interval notation. **[0, 8]; [2, 10]; [0, 12]**