Name _____ Date _____

LESSON 5.4

Challenge Practice

For use with the lesson "Solve Compound Inequalities"

In Exercises 1–5, solve the inequality, if possible. Write your solution using set-builder notation.

1. $2x - 5 > 3$ *and* $4x + 8 < 2$
2. $3x - 7 \geq 5$ *and* $-5x - 10 \geq -30$
3. $5x - 4 \geq -2$ *or* $3x + 7 > 10$
4. $4x + 6 \geq -1$ *or* $-3x + 5 > 35$
5. $-2x - 1 < 5$ *or* $3x + 4 < 19$

In Exercises 6–10, use the following information.

On a vacation to Greece, Sam, Ben, Grayson, and Alyssa decide to hire a tour guide. Sam agrees to pay twice as much as Alyssa, and Ben and Grayson each agree to pay half as much as Alyssa. The tour guide charges a minimum of $50 for a one-hour tour, and $20 for each additional hour.

6. Write an inequality expressing Alyssa's cost x in terms of the length of the tour y.
7. What is the minimum possible cost of the tour for Alyssa?
8. If the tour lasts 6 hours, what is the cost to Grayson?
9. After the first hour has passed, how much does each additional hour of the tour cost Sam?
10. If Ben has only $13.75, what is the maximum number of hours the tour can operate before Ben runs out of money?