Name _____ Date _____

LESSON 5.6

Challenge Practice

For use with the lesson "Solve Absolute Value Inequalities"

In Exercises 1–6, Solve the compound inequality.

1. $|2x + 3| < 4$ *and* $|3x + 2| < 4$
2. $|2x + 3| < 4$ *or* $|3x + 2| < 4$
3. $|4x - 1| < 3$ *and* $|2x + 4| < 5$
4. $|4x - 1| < 3$ *or* $|2x + 4| < 5$
5. $|3x + 2| > 2$ *or* $|x + 4| > 3$
6. $|-x + 2| \geq 1$ *or* $|x - 3| < 1$

In Exercises 7–10, solve the inequality, if possible.

7. $|2x + 3| > 2x + 3$
8. $|3x + 2| > 3x + 2$
9. $|2x + 3| \leq 2x + 3$
10. $|3x + 2| \geq 3x + 2$

In Exercises 11 and 12, use the following information.

A forest ranger is walking in a straight line from Ranger Station A to Ranger Station B, which are located 12 miles apart. Ranger Station A has a radio transmitter with a range of 8 miles. Ranger Station B has a radio transmitter with a range of 5 miles. Let x represent the distance that the Ranger has walked.

11. Write a pair of inequalities describing the distances walked for which the forest ranger will be in radio contact with both stations.
12. For how many miles will the forest ranger be in contact with only one station? With both stations?