Name _____ Date _____

LESSON 5.5

Challenge Practice

For use with the lesson "Solve Absolute Value Equations"

In Exercises 1–5, solve the equation, if possible.

1. $|2x + 3| = x$
2. $|3 - 2x| = x$
3. $|2x| = |x| + 2$
4. $|2x| + |-2x| = 12$
5. $|x + 5| = |x| + 5$

In Exercises 6–10, use the following information to solve the equation, if possible.

The expression $|x - a|$ represents the distance between points x and a on the real number line. If you write $|x - a| = b$, then you are saying that x and a are b units apart on the real number line. So the values of x must be $a - b$ or $a + b$. For example:

Solve $|x - 2| = 5$.

$x = 2 - 5$ or $x = 2 + 5$

$x = -3$ or $x = 7$

6. $|x - 4| = 7$
7. $|x + 6| = 2$
8. $|x - 3| = 5$ and $|x - 7| = 9$
9. $|x + 4| = 3$ and $|x - 1| = 2$
10. $|x - 5| = 10$ and $|2x - 5| = 25$