Name_____ Date_____

1.4 Practice B

In Exercises 1–10, solve the equation. Graph the solution(s), if possible.

1. $|p - 3| = 10$

2. $|-2k| = 6$

3. $|6f| = -2$

4. $\left|\dfrac{q}{5}\right| = 3$

5. $|-a + 2| + 9 = 6$

6. $3|4 - 3m| = 30$

7. $-4|5g - 12| = -12$

8. $|x - 3| + 9 = 30$

9. $3|2d - 6| + 2 = 2$

10. $7|2c - 6| + 4 = 32$

11. A company manufactures penny number 2 nails that are 1 inch in length. The actual length is allowed to vary by up to $\dfrac{1}{32}$ inch.

    a. Write and solve an absolute value equation to find the minimum and maximum acceptable nail length.

    b. A penny number 2 nail is 1.05 inches long. Is the nail acceptable? Explain.

In Exercises 12–14, write an absolute value equation that has the given solutions.

12. 3 and 9

13. −5 and 15

14. 4 and 11

In Exercises 15–20, solve the equation. Check your solutions.

15. $|9w - 4| = |2w + 10|$

16. $2|n + 7| = |4n + 8|$

17. $3|3t + 1| = 2|6t + 3|$

18. $|5r + 3| = 2r$

19. $|j - 5| = |j + 9|$

20. $|2k + 4| = |2k + 3|$

21. You conduct a random survey of your small town about having a community garage sale. Of those surveyed, 56% are in favor and 44% are opposed. The actual percent could be 5% more or 5% less than the acquired results.

    a. Write and solve an absolute value equation to find the least and greatest percents of your town population that could be opposed to a community garage sale.

    b. A friend claims that half the town is actually opposed to a community garage sale. Does this statement conflict with the survey data? Explain.