2-8 Technology: Solve Linear and Literal Equations

Name _____ Date _____

You can use a handheld to solve the equation $y = 5x - 4$
when $y = 11$.

Step 1 Press ⌂. Then choose **2** to select
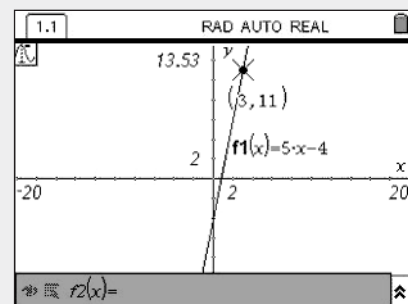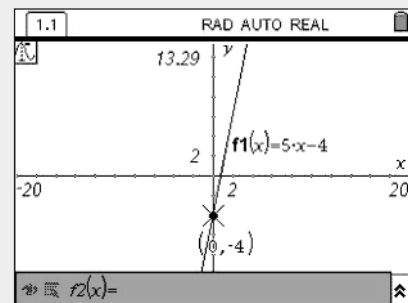**Graphs & Geometry**.

Step 2 Input $5x - 4$, then press ≈enter to graph the line.

Step 3 Press (menu). Select **Trace**, then select **Graph Trace**.

Step 4 Press (menu). Select **Trace** again, then select
Trace Setting. Change **Trace Step** to 1, then
press (tab) ≈enter for **OK**.

Step 5 Press ▶ to move the trace along the line until
the y-coordinate of the graph equals 11. The x-value
is the solution.

So $x = 3$ when $y = 11$.

Use a handheld to make a graph to solve the equation for the given value.

1. $y = 2x - 6$ when $y = 8$

$x = 7$

2. $y = 8x + 5$ when $y = 77$

3. $y = -5x + 3$ when $y = -97$

4. $y = -6x + 2$ when $y = -46$

5. $y = -2x - 5$ when $y = 3$

6. $y = -3x - 2$ when $y = 16$

7. $y = -2x + 1$ when $y = 19$

8. $y = -7x + 2$ when $y = 16$

9. $y = -0.5x + 1$ when $y = -4$

10. $y = -0.5x + 2$ when $y = -1$

11. $y = 2.5x + 3$ when $y = -7$

12. $y = 1.5x + 4$ when $y = -8$

13. $y = 3.2x - 1$ when $y = 16$

14. $y = 1.1x - 3$ when $y = 8$

15. $y = 3.1x - 1.5$ when $y = 14$

16. $y = 2.2x - 1.2$ when $y = -10$

17. $y = \frac{1}{2}x + 3$ when $y = -1$

18. $y = \frac{1}{4}x + 2$ when $y = -2$

19. $\frac{2}{3}x - 1 = y$ when $y = 3$

20. $\frac{3}{4}x - 2 = y$ when $y = 4$

21. $y = -\frac{1}{3}x + 1$ when $y = 4$

Use with **SOURCEBOOK Lesson 2-8, pages 62–63.**

Use a handheld to make a graph to solve the equation for the given value.
(*Hint:* Solve for *y* first.)

22. $y + 2x = 3$ when $y = 5$

$\underline{\hspace{2em} x = -1 \hspace{2em}}$

23. $y + 3x = 6$ when $y = 12$

24. $4x + 5y = 42$ when $y = -6$

25. $2x + 3y = 14$ when $y = -2$

26. $3x - 3y = -21$ when $y = 5$

27. $5x - 2y = -19$ when $y = 7$

28. $3x + 5y = 52$ when $y = 8$

29. $7x + 4y = 84$ when $y = 7$

30. $4x + 3y = -53$ when $y = -7$

31. $6x + 2y = -30$ when $y = -3$

32. $7x - 3y = -6$ when $y = 9$

33. $5x - 2y = -9$ when $y = 7$

34. $-5x + 3y = -31$ when $y = -7$

35. $-4x + 7y = -34$ when $y = -2$

36. $6x - 2y = -18$ when $y = -3$

37. $8x - 3y = -28$ when $y = -4$

38. $9x - 5y = 2$ when $y = -4$

39. $4x - 9y = 46$ when $y = -2$

40. $3y - 7x = -41$ when $y = -2$

41. $2y - 9x = -33$ when $y = -3$

42. $1.2x - 1.5y = -3.6$ when $y = 4$

43. $2.5x - 3.2y = -13.5$
when $y = 5$

44. $-16.3 = 9.8x + 1.1y$
when $y = 3$

45. $-4.3 = 2.8x + 1.2y$
when $y = 10$

Problem Solving

46. Business Lauren gives riding lessons at dude ranches. She charges $30 per hour plus $25 for travel. She earned $145 at Diamond H and $100 at M²D². How many more hours did she work at Diamond H than at M²D²?

47. Geometry A rectangular painting with perimeter 23.8 cm is 1.5 cm longer than its width. Find the width and length of the painting. (*Hint:* The formula for perimeter of a rectangle is $P = 2\ell + 2w$.)

CHALLENGE

48. Use a handheld to solve $5y - 2x = 9.3$ for *x* when $y = 2.8$.
Hint: Change the **Trace Step** value.