

In Exercises 15–40, solve the equation (if possible) and check your solution.

15. $2(x + 5) - 7 = 3(x - 2)$

16. $2(13t - 15) + 3(t - 19) = 0$

17. $\frac{5x}{4} + \frac{1}{2} = x - \frac{1}{2}$

18. $\frac{x}{5} - \frac{x}{2} = 3$

19. $0.25x + 0.75(10 - x) = 3$

20. $0.60x + 0.40(100 - x) = 50$

21. $x + 8 = 2(x - 2) - x$

22. $3(x + 3) = 5(1 - x) - 1$

23. $\frac{100 - 4u}{3} = \frac{5u + 6}{4} + 6$

24. $\frac{17 + y}{y} + \frac{32 + y}{y} = 100$

25. $\frac{5x - 4}{5x + 4} = \frac{2}{3}$

26. $\frac{10x + 3}{5x + 6} = \frac{1}{2}$

27. $10 - \frac{13}{x} = 4 + \frac{5}{x}$

28. $\frac{15}{x} - 4 = \frac{6}{x} + 3$

29. $\frac{1}{x - 3} + \frac{1}{x + 3} = \frac{10}{x^2 - 9}$

30. $\frac{1}{x - 2} + \frac{3}{x + 3} = \frac{4}{x^2 + x - 6}$

31. $\frac{x}{x + 4} + \frac{4}{x + 4} + 2 = 0$

32. $\frac{2}{(x - 4)(x - 2)} = \frac{1}{x - 4} + \frac{2}{x - 2}$

33. $\frac{7}{2x + 1} - \frac{8x}{2x - 1} = -4$

34. $\frac{4}{u - 1} + \frac{6}{3u + 1} = \frac{15}{3u + 1}$

35. $(x + 2)^2 + 5 = (x + 3)^2$

36. $(x + 1)^2 + 2(x - 2) = (x + 1)(x - 2)$

37. $(x + 2)^2 - x^2 = 4(x + 1)$

38. $(2x + 1)^2 = 4(x^2 + x + 1)$

39. $4 - 2(x - 2b) = ax + 3$

40. $5 + ax = 12 - bx$

MATH IS AWESOME!

41. *Exploration*

(a) Complete the table.

x	-1	0	1	2	3	4
$3.2x - 5.8$						

(b) Use the table in part (a) to determine the interval in which the solution to the equation $3.2x - 5.8 = 0$ is located. Explain your reasoning.

(c) Complete the table.

x	1.5	1.6	1.7	1.8	1.9	2
$3.2x - 5.8$						

(d) Use the table in part (c) to determine the interval in which the solution to the equation $3.2x - 5.8 = 0$ is located. Explain how this process can be used to approximate the solution to any desired degree of accuracy.

42. *Using a Model* The number of married women y in the civilian work force (in millions) in the United States from 1988 to 1992 can be approximated by the model

$$y = 0.43t + 30.86$$

where $t = 0$ represents 1990 (see figure). According to this model, during which year did this number reach 30 million? Explain how to answer the question graphically and algebraically. (Source: U.S. Bureau of Labor Statistics)

