Equations, Proportions, and Percent

Solving Equations, Part I

1. $1 = k - 8$
$+8 \quad +8$
$9 = k$

2. $u - 15 = -8$
$+15 \quad +15$
$u = 7$

3. $x - 7 = 10$
$+7 \quad +7$
$x = 17$

4. $-9 = p - 2$
$+2 \quad +2$
$-7 = p$

5. $\frac{3}{7} = p - \frac{1}{7}$
$+\frac{1}{7} \quad +\frac{1}{7}$
$\frac{4}{7} = p$

6. $q - 0.5 = 1.5$
$+0.5 \quad +0.5$
$q = 2$

7. $6 = t - 4.5$
$+4.5 \quad +4.5$
$10.5 = t$

8. $4\frac{2}{3} = r - \frac{1}{3}$
$+\frac{1}{3} \quad +\frac{1}{3}$
$5 = r$

9. $6 = x - 3$
$+3 \quad +3$
$9 = x$

10. $1.75 = k - 0.75$
$+0.75 \quad +0.75$
$2.50 = k$

11. $19 + a = 19$
$-19 \quad -19$
$a = 0$

12. $4 = 3.1 + y$
$-3.1 \quad -3.1$
$0.9 = y$

13. $m + 20 = 3$
$-20 \quad -20$
$m = -17$

14. $-12 = c + 3$
$-3 \quad -3$
$-15 = c$

15. $v + 2300 = -800$
$-2300 \quad -2300$
$v = -3100$

16. $b + 42 = 300$
$-42 \quad -42$
$b = 258$

17. $3.5 = n + 4$
$-4 \quad -4$
$-0.5 = n$

18. $b + \frac{1}{2} = \frac{1}{2}$
$-\frac{1}{2} \quad -\frac{1}{2}$
$b = 0$

19. $x + 5.34 = 5.39$
$-5.34 \quad -5.34$
$x = 0.05$

20. $2 = d + \frac{1}{4}$
$-\frac{1}{4} \quad -\frac{1}{4}$
$\frac{7}{4} = d$

21. $-12 + f = 3$
$+12 \quad +12$
$f = 15$

22. $-9 = -4 + g$
$+4 \quad +4$
$-5 = g$

23. $-1200 + j = 345$
$+1200 \quad +1200$
$j = 1545$

24. $90 = -22 + a$
$+22 \quad +22$
$112 = a$

25. $26 = -4 + y$
$+4 \quad +4$
$30 = y$

26. $1\frac{3}{4} = -\frac{1}{4} + w$
$+\frac{1}{4} \quad +\frac{1}{4}$
$2 = w$

27. $-\frac{1}{6} + h = \frac{1}{6}$
$+\frac{1}{6} \quad +\frac{1}{6}$
$h = \frac{1}{3}$

28. $-5.2 + a = -8$
$+5.2 \quad +5.2$
$a = -2.8$

29. Let a represent the amount in Luis's acount before the deposit.
$a + 500 = 4732$
$-500 \quad -500$
$a = 4232$
Luis had \$4232 in his account before the deposit.

Possible answer: Luis deposited \$500 and now has about \$4700. So the original amount will be close to $4700 - 500 = 4200$. So \$4232 is a reasonable answer.

30. $\frac{x}{2} = 12$
$(2)\left(\frac{x}{2}\right) = (2)(12)$
$x = 24$

31. $-40 = \frac{b}{5}$
$(5)(-40) = (5)\left(\frac{b}{5}\right)$
$-200 = b$

32. $-\frac{j}{6} = 6$
$(-6)\left(-\frac{j}{6}\right) = (-6)(6)$
$j = -36$

33. $-\frac{n}{3} = -4$
$(-3)\left(-\frac{n}{3}\right) = (-3)(-4)$
$n = 12$

34. $-\frac{q}{5} = 30$
$(-5)\left(-\frac{q}{5}\right) = (-5)(30)$
$q = -150$

35. $1.6 = \frac{d}{3}$
$(3)(1.6) = (3)\left(\frac{d}{3}\right)$
$4.8 = d$

36. $\frac{v}{10} = 5.5$

$(10)\left(\frac{v}{10}\right) = (10)(5.5)$

$v = 55$

37. $\frac{h}{8.1} = -4$

$(8.1)\left(\frac{h}{8.1}\right) = (8.1)(-4)$

$h = -32.4$

38. $5t = -15$

$\frac{5t}{5} = \frac{-15}{5}$

$t = -3$

39. $49 = 7c$

$\frac{49}{7} = \frac{7c}{7}$

$7 = c$

40. $-12 = -12u$

$\frac{-12}{-12} = \frac{-12u}{-12}$

$1 = u$

41. $-7m = 63$

$\frac{-7m}{-7} = \frac{63}{-7}$

$m = -9$

42. $-52 = -4c$

$\frac{-52}{-4} = \frac{-4c}{-4}$

$13 = c$

43. $11 = -2z$

$\frac{11}{-2} = \frac{-2z}{-2}$

$-5.5 = z$

44. $5f = 1.5$

$\frac{5f}{5} = \frac{1.5}{5}$

$f = 0.3$

45. $-8.4 = -4n$

$\frac{-8.4}{-4} = \frac{-4n}{-4}$

$2.1 = n$

46. $\frac{4}{7}t = -2$

$\left(\frac{7}{4}\right)\left(\frac{4}{7}t\right) = \left(\frac{7}{4}\right)(-2)$

$t = -3.5$

47. $-\frac{4}{5}p = \frac{2}{3}$

$\left(-\frac{5}{4}\right)\left(-\frac{4}{5}p\right) = \left(-\frac{5}{4}\right)\left(\frac{2}{3}\right)$

$p = -\frac{5}{6}$

48. $\frac{2}{3} = -\frac{1}{3}q$

$(-3)\left(\frac{2}{3}\right) = (-3)\left(-\frac{1}{3}q\right)$

$-2 = q$

49. $-\frac{5}{8} = -\frac{3}{4}a$

$\left(-\frac{4}{3}\right)\left(-\frac{5}{8}\right) = \left(-\frac{4}{3}\right)\left(-\frac{3}{4}a\right)$

$\frac{5}{6} = a$

50. Let s represent Alexandra's salary before taxes.

$\frac{7}{10}s = 392$

$\left(\frac{10}{7}\right)\left(\frac{7}{10}s\right) = \left(\frac{10}{7}\right)(392)$

$s = 560$

Alexandra's salary before taxes is $560.

51. $5 = 2g + 1$
$-1 \quad -1$
$4 = 2g$
$\frac{4}{2} = \frac{2g}{2}$
$2 = g$

52. $6h - 7 = 17$
$+7 \quad +7$
$6h = 24$
$\frac{6h}{6} = \frac{24}{6}$
$h = 4$

53. $0.6v + 2.1 = 4.5$
$-2.1 \quad -2.1$
$0.6v = 2.4$
$\frac{0.6v}{0.6} = \frac{2.4}{0.6}$
$v = 4$

54. $3x + 3 = 18$
$-3 \quad -3$
$3x = 15$
$\frac{3x}{3} = \frac{15}{3}$
$x = 5$

55. $0.6g + 11 = 5$
$-11 \quad -11$
$0.6g = -6$
$\frac{0.6g}{0.6} = \frac{-6}{0.6}$
$g = -10$

56. $32 = 5 - 3t$
$-5 \quad -5$
$27 = -3t$
$\frac{27}{-3} = \frac{-3t}{-3}$
$-9 = t$