

ALGEBRA ONE
Worksheet – Solving One- and Two-Step Equations

Find a numerical solution for each of the following equations, then check your answer.

1) $3x - 1 = 5$

2) $\frac{y}{2} + 14 = -27$

3) $10 = \frac{z}{32}$

4) $7a + 3 = 42$

5) $2 = 20b - 17$

6) $\frac{4c}{3} = 5$

7) $9 = \frac{d}{3} + 11$

8) $\frac{2e}{5} - 10 = 4$

9) $261 = 3r + 200$

10) $28 = -s - 11$

11) $-9 = \frac{t}{11} - 12$

12) $40 = m + 40$

13) $6u + 18 = 10$

14) $30 = \frac{2v}{7} + 26$

15) $-6w = 48$

16) $\frac{k}{15} = -2$

17) $7n = 84$

18) $5m - 51 = 19$

19) $\frac{p}{-8} = -16$

20) $q + 56 = 94$

21) $A + 48 = 45$

22) $4B - 5 = -96$

23) $\frac{C}{6} - 2 = 58$

24) $5D - 6 = 58$

25) $27 = E - 17$

26) $-119 = 7F$

27) $75 = 2H + 25$

28) $42 = \frac{K}{8}$

29) $0 = \frac{L}{15}$

30) $-1 = M + 59$

31) $60 = N + 3$

32) $145 = 5P - 3$

33) $\frac{U}{10} - 28 = 90$

34) $\frac{9V}{-20} = 4$

35) $\frac{W}{4} - 1 = 142$

36) $\frac{7X}{11} = 56$

37) $2Y = 78$

38) $\frac{Z}{5} + 164 = 164$

39) $F - 16 = 39$

40) $G + 28 = 100$

41) $0 = a - 19$

42) $18 = b + 18$

43) $1 = \frac{c}{53}$

44) $36 = 36d$

45) $-18 = 19 - d$

46) $34 = e - 18$

47) $16 = \frac{f}{9}$

48) $68 = 4g$

49) $\frac{m}{10} + 112 = 200$

50) $\frac{n}{53} + 10 = 6$

ANSWERS (WITH WORK)

The following answers show one way to work the problem. Most problems can be solved in two or more different ways. The important thing is to show all key-steps. If you arrived at the correct answer *in a different way*, check with your teacher to see if your way meets the requirements of the course.

Notice that all the equal signs in each answer line up. This is not a requirement of your work, but it does help you remember that the equal sign separates any equation work in algebra into right-sides and left-sides.

$$\begin{aligned} 1) \quad 3x - 1 &= 5 \\ 3x &= 6 \\ x &= 2 \end{aligned}$$

$$\begin{aligned} 2) \quad \frac{y}{2} + 14 &= -27 \\ \frac{y}{2} &= -41 \\ y &= -82 \end{aligned}$$

$$\begin{aligned} 3) \quad 10 &= \frac{z}{32} \\ 320 &= z \\ z &= 320 \end{aligned}$$

$$\begin{aligned} 4) \quad 7a + 3 &= 42 \\ 7a &= 39 \\ a &= 5\frac{4}{7} \end{aligned}$$

$$\begin{aligned} 5) \quad 2 &= 20b - 17 \\ 19 &= 20b \\ \frac{19}{20} &= b \\ b &= \frac{19}{20} \end{aligned}$$

$$\begin{aligned} 6) \quad \frac{4c}{3} &= 5 \\ 4c &= 15 \\ c &= 3\frac{3}{4} \end{aligned}$$

$$\begin{aligned} 7) \quad 9 &= \frac{d}{3} + 11 \\ -2 &= \frac{d}{3} \\ -6 &= d \\ d &= -6 \end{aligned}$$

$$\begin{aligned} 8) \quad \frac{2e}{5} - 10 &= 4 \\ \frac{2e}{5} &= 14 \end{aligned}$$

$$\begin{aligned} \frac{e}{5} &= 7 \\ e &= 35 \end{aligned}$$

$$\begin{aligned} 9) \quad 261 &= 3r + 200 \\ 3r + 200 &= 261 \\ 3r &= 61 \\ r &= 20\frac{1}{3} \end{aligned}$$

$$\begin{aligned} 10) \quad 28 &= -s - 11 \\ 39 &= -s \\ s &= -39 \end{aligned}$$

$$\begin{aligned} 11) \quad -9 &= \frac{t}{11} - 12 \\ 3 &= \frac{t}{11} \\ 33 &= t \\ t &= 33 \end{aligned}$$

$$\begin{aligned} 12) \quad 40 &= m + 40 \\ 0 &= m \\ m &= 0 \end{aligned}$$

$$\begin{aligned} 13) \quad 6u + 18 &= 10 \\ 6u &= -8 \\ u &= -1\frac{1}{3} \end{aligned}$$

$$14) \quad 30 = \frac{2v}{7} + 26$$

$$4 = \frac{2v}{7}$$

$$\begin{aligned} 14 &= v \\ v &= 14 \end{aligned}$$

$$\begin{aligned} 15) \quad -6w &= 48 \\ w &= -8 \end{aligned}$$

$$\begin{aligned} 16) \quad \frac{k}{15} &= -2 \\ k &= -30 \end{aligned}$$

$$\begin{aligned} 17) \quad 7n &= 84 \\ n &= 12 \end{aligned}$$

$$\begin{aligned} 18) \quad 5m - 51 &= 19 \\ 5m &= 70 \\ m &= 14 \end{aligned}$$

$$\begin{aligned} 19) \quad \frac{p}{-8} &= -16 \\ p &= 128 \end{aligned}$$

$$\begin{aligned} 20) \quad q + 56 &= 94 \\ q &= 38 \end{aligned}$$

$$\begin{aligned} 21) \quad A + 48 &= 45 \\ A &= -3 \end{aligned}$$

$$\begin{aligned} 22) \quad 4B - 5 &= -96 \\ 4B &= -91 \\ B &= -22\frac{3}{4} \end{aligned}$$

$$23) \quad \frac{C}{6} - 2 = 58$$

$$\frac{C}{6} = 60$$

$$C = 360$$

$$\begin{aligned} 24) \quad 5D - 6 &= 58 \\ 5D &= 64 \\ D &= 12\frac{4}{5} \end{aligned}$$

$$\begin{aligned} 25) \quad 27 &= E - 17 \\ 44 &= E \\ E &= 44 \end{aligned}$$

$$\begin{aligned} 26) \quad -119 &= 7F \\ 7F &= -119 \\ F &= -17 \end{aligned}$$

$$\begin{aligned} 27) \quad 75 &= 2H + 25 \\ 50 &= 2H \\ 2H &= 50 \\ H &= 25 \end{aligned}$$

$$\begin{aligned} 28) \quad 42 &= \frac{K}{8} \\ 336 &= K \\ K &= 336 \end{aligned}$$

$$\begin{aligned} 29) \quad 0 &= \frac{L}{15} \\ 0 &= L \\ L &= 0 \end{aligned}$$

$$\begin{aligned} 30) \quad -1 &= M + 59 \\ -60 &= M \\ M &= -60 \end{aligned}$$

$$31) \begin{aligned} 60 &= N + 3 \\ 57 &= N \\ N &= 57 \end{aligned}$$

$$32) \begin{aligned} 145 &= 5P - 3 \\ 142 &= 5P \\ 5P &= 142 \\ P &= 28.4 \end{aligned}$$

$$33) \begin{aligned} \frac{U}{10} - 28 &= 90 \\ U - 280 &= 900 \\ U &= 620 \end{aligned}$$

$$34) \begin{aligned} \frac{9V}{-20} &= 4 \\ 9V &= -80 \\ V &= -8\frac{8}{9} \end{aligned}$$

$$35) \begin{aligned} \frac{W}{4} - 1 &= 142 \\ \frac{W}{4} &= 143 \\ W &= 572 \end{aligned}$$

$$36) \begin{aligned} \frac{7X}{11} &= 56 \\ 7X &= 616 \\ X &= 88 \end{aligned}$$

$$37) \begin{aligned} 2Y &= 78 \\ Y &= 39 \end{aligned}$$

$$38) \begin{aligned} \frac{Z}{5} + 164 &= 164 \\ \frac{Z}{5} &= 0 \\ Z &= 0 \end{aligned}$$

$$39) \begin{aligned} F - 16 &= 39 \\ F &= 55 \end{aligned}$$

$$40) \begin{aligned} G + 28 &= 100 \\ G &= 72 \end{aligned}$$

$$41) \begin{aligned} 0 &= a - 19 \\ a - 19 &= 0 \\ a &= 19 \end{aligned}$$

$$42) \begin{aligned} 18 &= b + 18 \\ 0 &= b \\ b &= 0 \end{aligned}$$

$$43) \begin{aligned} 1 &= \frac{c}{53} \\ 53 &= c \\ c &= 53 \end{aligned}$$

$$44) \begin{aligned} 36 &= 36d \\ 1 &= d \\ d &= 1 \end{aligned}$$

$$45) \begin{aligned} 18 &= 19 - d \\ d &= 1 \end{aligned}$$

$$46) \begin{aligned} 34 &= e - 18 \\ 52 &= e \\ e &= 52 \end{aligned}$$

$$47) \begin{aligned} 16 &= \frac{f}{9} \\ 144 &= f \\ f &= 144 \end{aligned}$$

$$48) \begin{aligned} 68 &= 4g \\ 17 &= g \\ g &= 17 \end{aligned}$$

$$49) \begin{aligned} \frac{m}{10} + 112 &= 200 \\ \frac{m}{10} &= 88 \\ m &= 880 \end{aligned}$$

$$50) \begin{aligned} \frac{n}{53} + 10 &= 6 \\ \frac{n}{53} &= -4 \\ n &= -212 \end{aligned}$$