Practice Solving Multi-Step Equations

Directions: Solve the equation algebraically. Check your solution for the **odd** numbered problems.

1) $-3(x+5)=6$

$-3x-15=6$

$+15 \quad +15$

$-3x=21$

$-3x \quad -3x$

$x=-7$

2) $\frac{x}{8}-\frac{1}{2}=-\frac{7}{2}$

$+\frac{1}{2} \quad +\frac{1}{2}$

$8\left(\frac{x}{8}\right)=(-3)8$

$x=-24$

3) $-8x+9-2x=-11$

$-10x+9=-11$

$-9 \quad -9$

$\frac{-10x}{-10}=\frac{-20}{-10}$

$x=2$

4) $\frac{m}{2}+6=10$

$-6 \quad -6$

$2\left(\frac{m}{2}\right)=4(2)$

$m=8$

5) $-\frac{z}{3}+5=9$

$-5 \quad -5$

$\frac{-z}{3}=4$

$z=-12$

6) $\frac{2}{5}+3a+a=-\frac{6}{5}$

$\frac{2}{5}+4a=-\frac{6}{5}$

$-\frac{2}{5} \quad -\frac{2}{5}$

$\frac{4a}{4}=\frac{-8}{4}$

$a=-\frac{2}{5}$

7) $2v + 7 = 3$

$-7 \quad -7$

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

8) $4b + 3 = -9$

$-3 \quad -3$

$\frac{4b}{4} = \frac{-12}{4}$

$b = -3$

9) $17 = 5k - 2$

$+2 \quad +2$

$\frac{5k}{5} = \frac{19}{5}$

$k = 3.8$

10) $-6t - 5 = -10$

$+5 \quad +5$

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

$t = 0.8\overline{3}$

11) $8n + 16.2 = 1.6$

$-16.2 \quad -16.2$

$\frac{8n}{8} = \frac{-14.6}{8}$

$n = -1.83$

12) $-5g + 2.3 = -18.8$

$-2.3 \quad -2.3$

$\frac{-5g}{-5} = \frac{-21.1}{-5}$

$g = 4.22$

13) $2t - 5 = -10$

$+5 \quad +5$

$\frac{2t}{2} = \frac{-5}{2}$

$t = -2.5$

14) $-4p + 9 = -5$

$-9 \quad -9$

$\frac{-4p}{-4} = \frac{-14}{-4}$

$p = 3.5$

15) $11 = -5x - 2$

$-5x - 2 = 11$

$+2 \quad +2$

$\frac{-5x}{-5} = \frac{13}{-5}$

$x = -2.6$

16) $4 + 2.2h = -3.7$

$-4 \quad -4$

$\frac{2.2h}{2.2} = \frac{-7.7}{2.2}$

$h = -3.5$

17) $-4.8f + 6.4 = -8.48$

$-6.4 \quad -6.4$

$\frac{-4.8f}{-4.8} = \frac{-14.88}{-4.8}$

$f = 3.1$

18) $7.3y - 5.18 = -51.9$

$+5.18 \quad +5.18$

$\frac{7.3y}{7.3} = \frac{-46.72}{7.3}$

$y = -6.4$

19) $\frac{3}{5}g - \frac{1}{3} = -\frac{10}{3}$

$+\frac{1}{3} \quad +\frac{1}{3}$

$\frac{3}{5}g = \frac{-3}{3}$

$\frac{3}{5} \quad \frac{3}{5}$

$g = -5$

20) $\frac{a}{4} - \frac{5}{6} = -\frac{1}{2}$

$+\frac{5}{6} \quad +\frac{5}{6}$

$4\left(\frac{a}{4}\right) = \left(-\frac{1}{3}\right)4$

$a = \frac{4}{3}$ or $1\frac{1}{3}$

21) $-\frac{1}{3} + 2z = -\frac{5}{6}$

$+\frac{1}{3} \quad +\frac{1}{3}$

$\frac{2z}{2} = \frac{-1}{2} \cdot \frac{1}{2}$

$z = -\frac{1}{4}$

22) $2 - \frac{c}{3} = -\frac{5}{2}$

$-2 \quad -2$

$-3\left(-\frac{c}{3}\right) = \left(-4\frac{1}{2}\right)-3$

$c = 13\frac{1}{2}$

23) $-\frac{2}{3}x + \frac{3}{7} = \frac{1}{2}$

$-\frac{3}{7} \quad -\frac{3}{7}$

$-\frac{2}{3}x = \frac{1}{14}$

$-\frac{3}{2} \quad -\frac{3}{2}$

$x = -\frac{3}{28}$

24) $-\frac{9}{4}v + \frac{4}{5} = \frac{7}{8}$

$-\frac{4}{5} \quad -\frac{4}{5}$

$-\frac{9}{4}v = \frac{3}{40}$

$-\frac{4}{9} \quad -\frac{4}{9}$

$v = -\frac{1}{30}$

25) $3v - 9v = 30$

$-3v = 30$

$-3 \quad -3$

$v = -10$

26) $12x - 8x = -52$

$4x = -52$

$4 \quad 4$

$x = -13$

27) $-8y - 5y + 7y = 72$

$-6y = 72$

$-6 \quad -6$

$y = -12$

28) $6(x - 2) = -18$

$6x - 12 = -18$

$+12 \quad +12$

$6x = -6$

$6 \quad 6$

$x = -1$

29) $-4(m + 3) = 24$

$-4m - 12 = 24$

$+12 \quad +12$

$-4m = 36$

$-4 \quad -4$

$m = -9$

30) $-8(y + 9) = -40$

$-8y - 72 = -40$

$+72 \quad +72$

$-8y = 32$

$-8 \quad -8$

$y = -4$