

SOLVING LINEAR EQUATIONS - PRACTICE QUESTIONS



metatutor

1.
Solve

$$\begin{array}{r} x + 2 = 10 \\ -2 \qquad -2 \\ \hline x = 8 \end{array}$$

2.
Solve

$$\begin{array}{r} y - 8 = 3 \\ +8 \qquad +8 \\ \hline y = 11 \end{array}$$

3.
Solve

$$\begin{array}{r} 4z = 16 \\ \div 4 \qquad \div 4 \\ \hline z = 4 \end{array}$$

4.
Solve

$$\begin{array}{r} 12 - a = 4 \\ -12 \qquad -12 \\ \hline -a = -8 \\ \hline a = 8 \end{array}$$

5.
Solve

$$\begin{array}{r} \frac{b}{3} = 9 \\ \times 3 \qquad \times 3 \\ \hline b = 27 \end{array}$$

6.
Solve

$$\begin{array}{r} \frac{30}{c} = 5 \\ \hline c = 6 \end{array}$$

7.
Solve

$$\begin{array}{r} 3a + 2 = 17 \\ -2 \qquad -2 \\ \hline 3a = 15 \\ \div 3 \qquad \div 3 \\ \hline a = 5 \end{array}$$

8.
Solve

$$\begin{array}{r} 5b - 9 = 21 \\ +9 \qquad +9 \\ \hline 5b = 30 \\ \div 5 \qquad \div 5 \\ \hline b = 6 \end{array}$$

9.
Solve

$$\begin{array}{r} 6c + 11 = 35 \\ -11 \qquad -11 \\ \hline 6c = 24 \\ \div 6 \qquad \div 6 \\ \hline c = 4 \end{array}$$

10.
Solve

$$\begin{array}{r} 8x - 3 = 37 \\ +3 \qquad +3 \\ \hline 8x = 40 \\ \div 8 \qquad \div 8 \\ \hline x = 5 \end{array}$$

11.
Solve

$$\begin{array}{r} 11y + 20 = 64 \\ -20 \qquad -20 \\ \hline 11y = 44 \\ \div 11 \qquad \div 11 \\ \hline y = 4 \end{array}$$

12.
Solve

$$\begin{array}{r} 4z + 17 = 41 \\ -17 \quad -17 \\ \hline 4z = 24 \\ \div 4 \quad \div 4 \\ \hline z = 6 \end{array}$$

13.
Solve

$$\begin{array}{r} 7m - 10 = 39 \\ +10 \quad +10 \\ \hline 7m = 49 \\ \div 7 \quad \div 7 \\ \hline m = 7 \end{array}$$

14.
Solve

$$\begin{array}{r} 9t - 7 = 29 \\ +7 \quad +7 \\ \hline 9t = 36 \\ \div 9 \quad \div 9 \\ \hline t = 4 \end{array}$$

15.
Solve

$$\begin{array}{r} 20 - 3f = 11 \\ -20 \quad -20 \\ \hline -3f = -9 \\ \div -3 \quad \div -3 \\ \hline f = 3 \end{array}$$

16.
Solve

$$\begin{array}{r} 31 - 6h = 43 \\ -31 \quad -31 \\ \hline -6h = 12 \\ \div -6 \quad \div -6 \\ \hline h = -2 \end{array}$$

17.
Solve

$$\begin{array}{r} 3a + 11 = 2a + 19 \\ -2a \qquad -2a \\ -11 \qquad -11 \\ a + 11 = 19 \\ a = 8 \end{array}$$

18.
Solve

$$\begin{array}{r} 5x + 12 = 3x + 20 \\ -3x \qquad -3x \\ -12 \qquad -12 \\ 2x + 12 = 20 \\ \div 2 \qquad \div 2 \\ 2x = 8 \\ x = 4 \end{array}$$

19.
Solve

$$\begin{array}{r} 7y + 15 = 4y + 33 \\ -4y \qquad -4y \\ -15 \qquad -15 \\ 3y + 15 = 33 \\ \div 3 \qquad \div 3 \\ 3y = 18 \\ y = 6 \end{array}$$

20.
Solve

$$\begin{array}{r} 10z + 3 = 3z + 31 \\ -3z \qquad -3z \\ -3 \qquad -3 \\ 7z + 3 = 31 \\ \div 7 \qquad \div 7 \\ 7z = 28 \\ z = 4 \end{array}$$

21.
Solve

$$\begin{array}{r} 11x - 12 = 6x + 18 \\ -6x \qquad -6x \\ \hline 5x - 12 = 18 \\ +12 \qquad +12 \\ \hline 5x = 30 \\ \div 5 \qquad \div 5 \\ \hline x = 6 \end{array}$$

22.
Solve

$$\begin{array}{r} 7a - 13 = a + 23 \\ -a \qquad -a \\ \hline 6a - 13 = 23 \\ +13 \qquad +13 \\ \hline 6a = 36 \\ \div 6 \qquad \div 6 \\ \hline a = 6 \end{array}$$

23.
Solve

$$\begin{array}{r} 14b - 17 = 11b - 2 \\ -11b \qquad -11b \\ \hline 3b - 17 = -2 \\ +17 \qquad +17 \\ \hline 3b = 15 \\ \div 3 \qquad \div 3 \\ \hline b = 5 \end{array}$$

24.
Solve

$$\begin{array}{r} 7c - 22 = 10 - c \\ +c \qquad +c \\ \hline 8c - 22 = 10 \\ +22 \qquad +22 \\ \hline 8c = 32 \\ \div 8 \qquad \div 8 \\ \hline c = 4 \end{array}$$

25.
Solve

$$\begin{aligned} a + a + a + a &= 12 \\ 4a &= 12 \\ \div 4 & \qquad \qquad \div 4 \\ a &= 3 \end{aligned}$$

26.
Solve

$$\begin{aligned} b + b + b + b + b &= 35 \\ 5b &= 35 \\ \div 5 & \qquad \qquad \div 5 \\ b &= 7 \end{aligned}$$

27.
Solve

$$\begin{aligned} 3c + 4c + 5 &= 26 \\ 7c + 5 &= 26 \\ -5 & \qquad \qquad -5 \\ 7c &= 21 \\ \div 7 & \qquad \qquad \div 7 \\ c &= 3 \end{aligned}$$

28.
Solve

$$\begin{aligned} d + 2 + d + 7 &= 31 \\ 2d + 9 &= 31 \\ -9 & \qquad \qquad -9 \\ 2d &= 22 \\ \div 2 & \qquad \qquad \div 2 \\ d &= 11 \end{aligned}$$

29.
Solve

$$\begin{aligned} 2e + 3 + 4e &= 38 - e \\ 6e + 3 &= 38 - e \\ +e & \qquad \qquad +e \\ 7e + 3 &= 38 \\ -3 & \qquad \qquad -3 \\ 7e &= 35 \\ \div 7 & \qquad \qquad \div 7 \\ e &= 5 \end{aligned}$$

30.
Solve

$$\begin{aligned} 4f - 5 + 2f &= 3f + 10 \\ 6f - 5 &= 3f + 10 \\ -3f & \qquad \qquad -3f \\ 3f - 5 &= 10 \\ +5 & \qquad \qquad +5 \\ 3f &= 15 \\ \div 3 & \qquad \qquad \div 3 \\ f &= 5 \end{aligned}$$

31.
Solve

$$\begin{aligned} 3(4x + 1) &= 51 \\ -3 \quad 12x + 3 &= 51 \quad -3 \\ \div 12 \quad 12x &= 48 \quad \div 12 \\ x &= 4 \end{aligned}$$

32.
Solve

$$\begin{aligned} 2(y + 7) &= 25 \\ -14 \quad 2y + 14 &= 25 \quad -14 \\ \div 2 \quad 2y &= 11 \quad \div 2 \\ y &= \frac{11}{2} \end{aligned}$$

33.
Solve

$$\begin{aligned} 12a &= 3(3a + 9) \\ -9a \quad 12a &= 9a + 27 \quad -9a \\ \div 3 \quad 3a &= 27 \quad \div 3 \\ a &= 9 \end{aligned}$$

34.
Solve

$$\begin{aligned} 4(2m - 5) &= 3(m + 5) \\ -3m \quad 8m - 20 &= 3m + 15 \quad -3m \\ +20 \quad 5m - 20 &= 15 \quad +20 \\ \div 5 \quad 5m &= 35 \quad \div 5 \\ m &= 7 \end{aligned}$$

35.
Solve

$$\begin{array}{ccc} & \frac{x+1}{2} = 6 & \\ \times 2 & & \times 2 \\ -1 & x+1 = 12 & -1 \\ & x = 11 & \end{array}$$

36.
Solve

$$\begin{array}{ccc} & \frac{y-3}{5} = 3 & \\ \times 5 & & \times 5 \\ +3 & y-3 = 15 & +3 \\ & y = 18 & \end{array}$$

37.
Solve

$$\begin{array}{ccc} & \frac{3g-5}{2} = 5 & \\ \times 2 & & \times 2 \\ +5 & 3g-5 = 10 & +5 \\ \div 3 & 3g = 15 & \div 3 \\ & g = 5 & \end{array}$$

38.
Solve

$$\begin{array}{ccc} & \frac{4p+11}{5} = 7 & \\ \times 5 & & \times 5 \\ -11 & 4p+11 = 35 & -11 \\ \div 4 & 4p = 24 & \div 4 \\ & p = 6 & \end{array}$$

39.
Solve

$$\begin{array}{r} \frac{5-2k}{7} = 3 \\ \times 7 \qquad \qquad \times 7 \\ 5-2k = 21 \\ -5 \qquad \qquad -5 \\ -2k = 16 \\ \div -2 \qquad \div -2 \\ k = -8 \end{array}$$

40.
Solve

$$\begin{array}{r} \frac{5x-27}{2} = x \\ \times 2 \qquad \qquad \times 2 \\ 5x-27 = 2x \\ -5x \qquad \qquad -5x \\ -27 = -3x \\ \div -3 \qquad \div -3 \\ x = 9 \end{array}$$

41.
Solve

$$\begin{array}{r} \frac{3w-11}{7} = 2w \\ \times 7 \qquad \qquad \times 7 \\ 3w-11 = 14w \\ -3w \qquad \qquad -3w \\ -11 = 11w \\ \div 11 \qquad \div 11 \\ w = -1 \end{array}$$

42.
Solve

$$\begin{array}{r} \frac{3b+13}{4} = 2b-3 \\ \times 4 \qquad \qquad \times 4 \\ 3b+13 = 8b-12 \\ -3b \qquad \qquad -3b \\ 13 = 5b-12 \\ +12 \qquad \qquad +12 \\ 25 = 5b \\ \div 5 \qquad \div 5 \\ b = 5 \end{array}$$

43.
Solve

$$\begin{array}{r} 4m - 1 = \frac{13m + 23}{5} \\ \times 5 \qquad \qquad \qquad \times 5 \\ -13 \quad 20m - 5 = 13m + 23 \quad -13 \\ +5 \quad 7m - 5 = 23 \quad +5 \\ \div 7 \quad 7m = 28 \quad \div 7 \\ \qquad \qquad m = 4 \end{array}$$

44.
Solve

$$\begin{array}{r} \frac{p+3}{2} = \frac{4p+5}{7} \\ \times 2 \qquad \qquad \qquad \times 2 \\ \times 7 \quad p+3 = \frac{8p+10}{7} \quad \times 7 \\ -7p \quad 7p+21 = 8p+10 \quad -7p \\ -10 \quad 21 = p+10 \quad -10 \\ \qquad \qquad p = 11 \end{array}$$

45.
Solve

$$\begin{array}{r} 5 = \frac{7u-15}{u} \\ \times u \qquad \qquad \qquad \times u \\ -7u \quad 5u = 7u - 15 \quad -7u \\ \div -2 \quad -2u = -15 \quad \div -2 \\ \qquad \qquad u = \frac{15}{2} \end{array}$$

46.
Solve

$$\begin{array}{r} \frac{3t}{5} + 5 = t - 3 \\ \times 5 \qquad \qquad \qquad \times 5 \\ -3t \quad 3t + 25 = 5t - 15 \quad -3t \\ +15 \quad 25 = 2t - 15 \quad +15 \\ \div 2 \quad 40 = 2t \quad \div 2 \\ \qquad \qquad t = 20 \end{array}$$