

2.2 Two Step Equations Worksheet

SOLVING TWO-STEP EQUATIONS Solve the equation. Check your solution.

3. $3x + 7 = 19$

$$\begin{array}{r} -7 \quad -7 \\ \hline 3x = 12 \\ \frac{3}{3} \quad \frac{3}{3} \end{array}$$

$x = 4$

4. $5h + 4 = 19$

$$\begin{array}{r} -4 \quad -4 \\ \hline 5h = 15 \\ \frac{5}{5} \quad \frac{5}{5} \end{array}$$

$h = 3$

5. $7d - 1 = 13$

$$\begin{array}{r} +1 \quad +1 \\ \hline 7d = 14 \\ \frac{7}{7} \quad \frac{7}{7} \end{array}$$

$d = 2$

9. $\frac{a}{3} + 4 = 6$

$$\begin{array}{r} -4 \quad -4 \\ \hline \frac{a}{3} = 2 \end{array}$$

$3 \cdot \frac{a}{3} = 2 \cdot 3$

$a = 6$

10. $17 = \frac{w}{5} + 13$

$$\begin{array}{r} -13 \quad -13 \\ \hline \frac{w}{5} = 4 \end{array}$$

$5 \cdot \frac{w}{5} = 4 \cdot 5$

$w = 20$

11. $\frac{b}{2} - 9 = 11$

$$\begin{array}{r} +9 \quad +9 \\ \hline \frac{b}{2} = 20 \end{array}$$

$2 \cdot \frac{b}{2} = 20 \cdot 2$

$b = 40$

6. $2g - 13 = 3$

$$\begin{array}{r} +13 \quad +13 \\ \hline 2g = 16 \end{array}$$

$$\frac{2g}{2} = \frac{16}{2}$$

$g = 8$

7. $10 = 7 - m$

$$\begin{array}{r} -7 \quad -7 \\ \hline 3 = -m \end{array}$$

$$\frac{3}{-1} = \frac{-m}{-1}$$

$m = -3$

8. $11 = 12 - q$

$$\begin{array}{r} -12 \quad -12 \\ \hline -1 = -q \end{array}$$

$$\frac{-1}{-1} = \frac{-q}{-1}$$

$q = 1$

12. $-6 = \frac{z}{4} - 3$

$$\begin{array}{r} +3 \quad +3 \\ \hline -3 = \frac{z}{4} \end{array}$$

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

$z = -12$

13. $7 = \frac{5}{6}c - 8$

$$\begin{array}{r} +8 \quad +8 \\ \hline \frac{5}{6}c = 15 \end{array}$$

$$\frac{6}{5} \cdot \frac{5}{6}c = \frac{5}{6} \cdot 15 \cdot \frac{6}{5}$$

$c = 18$

14. $10 = \frac{2}{7}n + 4$

$$\begin{array}{r} -4 \quad -4 \\ \hline 6 = \frac{2}{7}n \end{array}$$

$$\frac{7}{2} \cdot \frac{2}{7}n = \frac{6}{1} \cdot \frac{7}{2}$$

$n = 21$

COMBINING LIKE TERMS Solve the equation. Check your solution.

15. $8y + 3y = 44$

$$\frac{11y}{11} = \frac{44}{11}$$

$y = 4$

16. $2p + 7p = 54$

$$\frac{9p}{9} = \frac{54}{9}$$

$p = 6$

17. $11x - 9x = 18$

$$\frac{2x}{2} = \frac{18}{2}$$

$x = 9$

$$18. 36 = 9x - 3x$$

$$\frac{36}{6} = \frac{6x}{6}$$

$$\boxed{x=6}$$

$$19. -32 = -5k + 13k$$

$$\frac{-32}{8} = \frac{8k}{8}$$

$$\boxed{k=-4}$$

$$20. 6 = -7f + 4f$$

$$\frac{6}{-3} = \frac{-3f}{-3}$$

$$\boxed{f=-2}$$

FINDING AN INPUT OF A FUNCTION Write an equation for the function described. Then find the input.

24. The output of a function is 7 more than 3 times the input. Find the input when the output is -8 .

$$\begin{array}{r} 7 + 3x = -8 \\ -7 \quad -7 \end{array}$$

$$\frac{3x}{3} = \frac{-15}{3}$$

$$\boxed{x=-5}$$

25. The output of a function is 4 more than 2 times the input. Find the input when the output is -10 .

$$\begin{array}{r} 4 + 2x = -10 \\ -4 \quad -4 \end{array}$$

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

$$\boxed{x=-7}$$

26. The output of a function is 9 less than 10 times the input. Find the input when the output is 11.

$$\begin{array}{r} 10x - 9 = 11 \\ +9 \quad +9 \end{array}$$

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

$$\boxed{x=2}$$