

ONE STEP EQUATIONS
SOLVE EACH EQUATION

$$1) \frac{x}{2} = 20$$
$$\frac{x}{2} \cdot 2 = 20 \cdot 2$$
$$x = 40$$

$$2) \frac{y}{4} = 16$$
$$\frac{y}{4} \cdot 4 = 16 \cdot 4$$
$$y = 64$$

$$3) \frac{x}{8} = 24$$
$$\frac{x}{8} \cdot 8 = 24 \cdot 8$$
$$x = 192$$

$$4) \frac{6x}{6} = 30$$
$$x = 30$$

$$5) x + 5 = 8$$
$$x + 5 - 5 = 8 - 5$$
$$x = 3$$

$$6) x + 1 = 5$$
$$x + 1 - 1 = 5 - 1$$
$$x = 4$$

$$7) x - 8 = 3$$
$$x - 8 + 8 = 3 + 8$$
$$x = 11$$

$$8) x - 6 = 12$$
$$x - 6 + 6 = 12 + 6$$
$$x = 18$$

$$9) x - 2 = 17$$
$$x - 2 + 2 = 17 + 2$$
$$x = 19$$

$$10) 8 = 12 + x$$
$$8 - 12 = 12 + x - 12$$
$$-4 = x$$

$$11) x - 5 = 4$$
$$x - 5 + 5 = 4 + 5$$
$$x = 9$$

$$12) 2 - x = -12$$
$$2 - x + 2 = -12 + 2$$
$$4 - x = -10$$
$$-x = -14$$
$$x = 14$$

$$\begin{array}{l} 13) \quad 16 = 4 + n \\ \quad +4 \quad +4 \\ \hline 20 = n \end{array}$$

$$\begin{array}{l} 14) \quad n + 4 = -25 \\ \quad +4 \quad +4 \\ \hline n = -21 \end{array}$$

$$\begin{array}{l} 15) \quad n + 12 = -9 \\ \quad -12 \quad -12 \\ \hline n = -21 \end{array}$$

$$\begin{array}{l} 16) \quad 14 = 18 - n \\ \quad -18 \quad +18 \\ \hline -4 = n \end{array}$$

$$\begin{array}{l} 17) \quad 2 + n = -14 \\ \quad -2 \quad -2 \\ \hline n = -16 \end{array}$$

$$\begin{array}{l} 18) \quad n + 5 = 15 \\ \quad +5 \quad +5 \\ \hline n = 20 \end{array}$$

$$\begin{array}{l} 19) \quad 25 = n + 5 \\ \quad +5 \quad +5 \\ \hline 30 = n \end{array}$$

$$\begin{array}{l} 20) \quad n + 3 = 12 \\ \quad +3 \quad +3 \\ \hline n = 15 \end{array}$$

$$\begin{array}{l} 21) \quad n + 12 = 12 \\ \quad +12 \quad +12 \\ \hline n = 24 \end{array}$$

$$\begin{array}{l} 22) \quad n + 12 = -25 \\ \quad +12 \quad +12 \\ \hline n = -13 \end{array}$$

$$\begin{array}{l} 23) \quad n + 13 = 32 \\ \quad +13 \quad +13 \\ \hline n = 45 \end{array}$$

$$\begin{array}{l} 24) \quad -55 = n - 18 \\ \quad +18 \quad +18 \\ \hline -37 = n \end{array}$$

$$\begin{array}{r} 25) \quad x - 12 = 18 \\ + 12 \quad + 12 \\ \hline x = 30 \end{array}$$

$$\begin{array}{r} 26) \quad 20 = 5x \\ \quad \quad \quad \frac{4}{5} \quad \frac{4}{5} \\ \hline 4 = x \end{array}$$

$$\begin{array}{r} 27) \quad x - 30 = 20 \\ + 30 \quad + 30 \\ \hline x = 50 \end{array}$$

$$\begin{array}{r} 28) \quad x - 12 = 32 \\ + 12 \quad + 12 \\ \hline x = 44 \end{array}$$

$$\begin{array}{r} 29) \quad 36 - x = 3 \\ + 36 \quad + 36 \\ \hline 39 \\ x = 39 \end{array}$$

$$\begin{array}{r} 30) \quad x - 14 = 14 \\ + 14 \quad + 14 \\ \hline x = 28 \end{array}$$

$$\begin{array}{r} 31) \quad 19 - x = -15 \\ + 19 \quad + 19 \\ \hline x = 4 \end{array}$$

$$\begin{array}{r} 32) \quad x - 19 = -35 \\ + 19 \quad + 19 \\ \hline x = -16 \end{array}$$

TWO STEP EQUATIONS

$$\begin{array}{r} 1) \quad 2n + 3 = 5 \\ \quad -3 \quad -3 \\ \hline 2n \quad 2 \\ \quad 2 \quad 2 \\ \hline n = 1 \end{array}$$

$$\begin{array}{r} 2) \quad -2 + 8 = 5 \\ \quad -8 \quad -8 \\ \hline -2 = -3 \\ \quad -1 \quad -1 \\ \hline n = 3 \end{array}$$

$$\begin{array}{r} 3) \quad 3n + 4 = 5 \\ \quad +4 \quad +4 \\ \hline 3n \quad 9 \\ \quad 3 \quad 3 \\ \hline n = 3 \end{array}$$

$$\begin{array}{r} 4) \quad -(2-n) = 5 \\ \quad -2 + n = 5 \\ \quad +2 \quad +2 \\ \hline n = 7 \end{array}$$

$$\begin{array}{r} 5) \quad 2n + 18 = 12 \\ \quad +18 \quad +18 \\ \hline 2n \quad 30 \\ \quad 2 \quad 2 \\ \hline n = 15 \end{array}$$

$$\begin{array}{r} 6) \quad 4n - 2 = 6 \\ \quad +2 \quad +2 \\ \hline 4n \quad 8 \\ \quad 4 \quad 4 \\ \hline n = 2 \end{array}$$

$$\begin{array}{r} 7) \quad 2n + 4 = 4 \\ \quad +4 \quad +4 \\ \hline 2n \quad 8 \\ \quad 2 \quad 2 \\ \hline n = 4 \end{array}$$

$$\begin{array}{r} 8) \quad 5n + 10 = 25 \\ \quad -10 \quad -10 \\ \hline 5n \quad 15 \\ \quad 5 \quad 5 \\ \hline n = 3 \end{array}$$

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$$\begin{array}{r} 9) \quad 8n + 9 = 25 \\ \quad -9 \quad -9 \\ \hline \quad 8n \quad 16 \\ \quad \quad 8 \quad 8 \\ \hline \quad \quad n = 2 \end{array}$$

$$\begin{array}{r} 10) \quad -3(2+n) = 3 \\ \quad -6 + 3 = 3 \\ \quad +6 \quad +6 \\ \hline \quad -3n = 9 \quad n = -3 \\ \quad \quad 3 \quad 3 \end{array}$$

$$\begin{array}{r} 11) \quad -2(4+n) = 4 \\ \quad +8 + n = 4 \\ \quad +8 \quad +8 \\ \hline \quad 1n \quad 12 = n = 12 \\ \quad \quad n \quad 1 \end{array}$$

$$\begin{array}{r} 12) \quad 20 = -(n-8) \\ \quad -8 \quad -n + 8 \\ \quad -12 \quad -8 \\ \hline \quad -12 = n \end{array}$$

$$\begin{array}{r} 13) \quad 2(2-2n) = 20 \\ \quad 4 - 2n = 20 \\ \quad -4 \quad -4 \\ \hline \quad -2n \quad -16 \\ \quad \quad 2 \quad 2 \\ \hline \quad \quad n = 8 \end{array}$$

$$\begin{array}{r} 14) \quad -12 = -(2n+8) \\ \quad -12 = -2n - 8 \\ \quad +8 \quad +8 \\ \hline \quad -4 = -2n \\ \quad -2 \quad -2 \\ \hline \quad 2 = n \end{array}$$

$$\begin{array}{r} 15) \quad 5(2+n) = 5 \\ \quad 10 + 5n = 5 \\ \quad -10 \quad -10 \\ \hline \quad 5n = -5 \\ \quad \quad 5 \quad 5 \\ \hline \quad \quad n = -1 \end{array}$$

$$\begin{array}{r} 16) \quad 2(n-4) = 4 \\ \quad 2n - 8 = 4 \\ \quad +8 \quad +8 \\ \hline \quad 2n = 12 \\ \quad \quad 2 \quad 2 \\ \hline \quad \quad n = 6 \end{array}$$

$$\begin{array}{r}
 12) -28 = 2n + 12n \\
 -28 = 14n \\
 14 = 14n \\
 \frac{-2}{14} \\
 -7 = n
 \end{array}$$

$$\begin{array}{r}
 19) 2(3+2n) = -18 \\
 6+2n = -18 \\
 -6 \quad -6 \\
 2n \quad -24 \\
 \frac{2}{2} \quad \frac{-24}{2} \\
 n = -12
 \end{array}$$

$$\begin{array}{r}
 21) 10 - 3n = 14 + n \\
 -14 \quad -14 \\
 -4 - 3n = n \\
 +3n \quad +3n \\
 -4 = 4n = -1 \\
 \frac{-4}{4} = \frac{-4n}{4} \\
 -1 = n
 \end{array}$$

$$\begin{array}{r}
 23) 24 = (-4n) - 8 + 8 \\
 24 = (-4n) \\
 24 = -4n \\
 \frac{-4}{-4} \quad \frac{-4n}{-4} \\
 -6 = -4n \\
 \frac{-6}{-4} = \frac{-4n}{-4} \\
 -6 = n
 \end{array}$$

$$\begin{array}{r}
 16) 3n + 45 = -n - 5 \\
 -45 \quad -45 \\
 3n = -n - 20 \\
 3n + n = -n - 20 + n \\
 4n = -20 \\
 \frac{4n}{4} = \frac{-20}{4} \\
 n = -5
 \end{array}$$

$$\begin{array}{r}
 20) -12 - 2n = -8 + n \\
 -2n - 12 = -8 + n \\
 -2n - 12 + 12 = -n + 8 + 12 \\
 -2n = -n + 20 \\
 -2n + n = -n + 20 + n \\
 -n = 20 \\
 n = -20
 \end{array}$$

$$\begin{array}{r}
 22) 10 + 10n = 2 + 4n \\
 10n + 10 = 2 + 4n \\
 10n + 10 - 10 = 4n + 2 + 10 \\
 10n = 4n + 8 \\
 10n - 4n = 4n + 8 - 4n \\
 6n = 8 \\
 n = \frac{8}{6} = \frac{4}{3}
 \end{array}$$

$$\begin{array}{r}
 24) 12 = 2n - 12 + 6n \\
 12 = 2n + 6n - 12 \\
 12 = 8n - 12 \\
 12 + 12 = 8n \\
 \frac{24}{8} = \frac{8n}{8} \\
 3 = n
 \end{array}$$

Algebra: SOLVING EQUATIONS
ONE STEP EQUATIONS

ANSWERS

1. $x=10$
2. $x=4$
3. $x=3$
4. $x=5$
5. $x=3$
6. $x=6$
7. $x=11$
8. $x=6$
9. $x=19$
10. $x=-4$
11. $x=9$
12. $x=-10$
13. $x=20$
14. $x=-21$
15. $x=-21$
16. $x=-4$
17. $x=-16$
18. $x=20$
19. $x=30$
20. $x=15$
21. $x=24$
22. $x=-31$
23. $x=45$
24. $x=-37$
25. $x=30$
26. $x=4$
27. $x=50$
28. $x=44$
29. $x=39$
30. $x=28$
31. $x=4$
32. $x=-16$

Commented [1]: Check work.

Commented [2]: Check work.

TWO STEP EQUATIONS

ANSWERS

1. $x=1$
2. $x=3$
3. $x=3$
4. $x=7$

5. $x=15$
6. $x=2$
7. $x=9$
8. $x=3$
9. $x=2$
10. $x=-3$
11. $x=12$
12. $x=-12$
13. $x=-8$
14. $x=2$
15. $x=-1$
16. $x=16$
17. $x=-7$
18. $x=-5$
19. $x=-12$
20. $x=4$
21. $x=-1$
22. $x=-4/3$
23. $x=-6$
24. $x=3$
25. $x=3$
26. $x=30$
27. $x=5$
28. $x=13$
29. $x=2$
30. $x=2$
31. $x=-3$
32. $x=-6$

Commented [3]: check work.

Commented [4]: check work.