

Notes - One-Step Equations

Name: Key

- 1) To solve an equation for a given variable, you need to do the "inverse" of whatever has been done to the variable. (opposite)
- 2) You want to get x by itself; that is, the "variable" on one side.
- 3) Since an equation is a balanced scale, whatever you do to the one side, you must do the exact same thing to the other side!

YOU MUST SHOW ALL OF YOUR WORK AND CHECK EVERY ANSWER			
1) $y + 3 = 10$ $\begin{array}{r} \cancel{-3} \quad \quad \cancel{-3} \\ y = 7 \end{array}$ <div style="border: 1px solid black; border-radius: 50%; padding: 5px; width: fit-content; margin-top: 10px;"> You do the opposite operation to solve for y </div>	Check: $y + 3 = 10$ $(7) + 3 = 10$ $10 = 10$ ✓	2) $t - 9 = 36$ $\begin{array}{r} \cancel{+9} \quad \quad \cancel{+9} \\ t = 45 \end{array}$	Check: $t - 9 = 36$ $(45) - 9 = 36$ $36 = 36$ ✓
Solution: $y = 7$		Solution: $t = 45$	
3) $\frac{8z}{8} = \frac{56}{8}$ $z = 7$	Check: $8z = 56$ $8(7) = 56$ $56 = 56$ ✓	4) $4 \cdot \frac{b}{4} = 7 \cdot 4$ $b = 28$	Check: $\frac{b}{4} = 7$ $\frac{(28)}{4} = 7$ $7 = 7$ ✓
Solution: $z = 7$		Solution: $b = 28$	
5) $x + 36 = 132$ $\begin{array}{r} \cancel{-36} \quad \quad \cancel{-36} \\ x = 96 \end{array}$	Check: $x + 36 = 132$ $(96) + 36 = 132$ $132 = 132$ ✓	6) $a - 21 = 47$ $\begin{array}{r} \cancel{+21} \quad \quad \cancel{+21} \\ a = 68 \end{array}$	Check: $a - 21 = 47$ $(68) - 21 = 47$ $47 = 47$ ✓
Solution: $x = 96$		Solution: $a = 68$	

8 $\overline{)216}$
-16
56

7) $\frac{15f}{15} = \frac{225}{15}$
 $f = 15$

Check:
 $15f = 225$
 $15(15) = 225$
 $225 = 225$
✓

8) $8 \cdot \frac{d}{8} = 27 \cdot 8$
 $d = 216$
 $\begin{array}{r} 5 \\ 27 \\ \times 8 \\ \hline 216 \end{array}$

Check:
 $\frac{d}{8} = 27$
 $\frac{(216)}{8} = 27$
 $27 = 27$
✓

Solution: $f = 15$

Solution: $d = 216$

9) $8 \cdot \frac{p}{8} = 2 \cdot 8$
 $p = 16$

Check:
 $\frac{p}{8} = 2$
 $\frac{(16)}{8} = 2$
 $2 = 2$ ✓

10) $d + 28 = 85$
 $\begin{array}{r} -28 \\ \hline d = 57 \end{array}$

Check:
 $d + 28 = 85$
 $(57) + 28 = 85$
 $85 = 85$
✓

Solution: $p = 16$

Solution: $d = 57$

11) $n - 31 = 36$
 $\begin{array}{r} +31 \\ \hline n = 67 \end{array}$

Check:
 $n - 31 = 36$
 $(67) - 31 = 36$
 $36 = 36$
✓

12) $\frac{8y}{8} = \frac{64}{8}$
 $y = 8$

Check:
 $8y = 64$
 $8(8) = 64$
 $64 = 64$
✓

Solution: $n = 67$

Solution: $y = 8$

13) $5 \cdot \frac{b}{5} = 20 \cdot 5$
 $b = 100$

Check:
 $\frac{b}{5} = 20$
 $\frac{(100)}{5} = 20$
 $20 = 20$ ✓

14) $97 = w - 47$
 $\begin{array}{r} +47 \\ \hline 144 = w \end{array}$

Check:
 $97 = w - 47$
 $97 = (144 - 47)$
 $97 = 97$
✓

Solution: $b = 100$

Solution: $w = 144$