

Worksheet 5-3: Solving Equations with Brackets**Step 1:** Expand the brackets by **multiplying****Step 2:** Move the number over by **adding or subtracting****Step 3:** Isolate the variable by **dividing or multiplying**

Steps	English
<p>1. $2(x + 5) = 18$</p> $2x + 10 = 18$ $2x + 10 - 10 = 18 - 10$ $2x = 8$ $\frac{2x}{2} = \frac{8}{2}$ $x = 4$	<p>Step 1: Expand the brackets by multiplying 2 into the brackets.</p> <p>Step 2: Isolate $2x$ by subtracting 10 from both sides.</p> <p>Step 3: Isolate x by dividing both sides with 2.</p>
<p>2. $3(x - 4) = 18$</p> $3x - 12 = 18$ $3x - 12 + 12 = 18 + 12$ $3x = 30$ $\frac{3x}{3} = \frac{30}{3}$ $x = 10$	<p>Step 1: Expand the brackets by multiplying 3 into the brackets.</p> <p>Step 2: Isolate $3x$ by adding 12 to both sides.</p> <p>Step 3: Isolate x by dividing both sides with 3.</p>
<p>3. $-4(2y - 3) = -20$</p> $-8y + 12 = -20$ $-8y + 12 - 12 = -20 - 12$ $-8y = -32$ $\frac{-8y}{-8} = \frac{-32}{-8}$ $y = 4$	<p>Step 1: Expand the brackets by multiplying -4 into the brackets.</p> <p>Step 2: Isolate $-8y$ by subtracting 12 from both sides.</p> <p>Step 3: Isolate x by dividing both sides with -8.</p>

Steps	English
4. $6(x + 3) = 42$	Step 1: _____ _____ Step 2: _____ _____ Step 3: _____ _____
5. $5(y - 4) = 15$	Step 1: _____ _____ Step 2: _____ _____ Step 3: _____ _____
6. $-3(m + 11) = 6$	Step 1: _____ _____ Step 2: _____ _____ Step 3: _____ _____

Answers: 4. $x = 4$; 5. $y = 7$; 6. $m = -13$

Steps	English
7. $-2(n+9)=10$	Step 1: _____ _____ Step 2: _____ _____ Step 3: _____ _____
8. $2(7n+9)=-10$	Step 1: _____ _____ Step 2: _____ _____ Step 3: _____ _____
9. $5(2y-3)=15$	Step 1: _____ _____ Step 2: _____ _____ Step 3: _____ _____

Answers: 7. $n=-14$; 8. $n=-2$; 9. $y=3$

Solve each equation.

1. $3(x + 2) = 12$

2. $2(u + 7) = 2$

3. $5(a - 8) = 30$

4. $16 = 8(z - 5)$

5. $-3(m - 2) = 48$

6. $35 = -7(a + 3)$

7. $6y = 4(y + 8)$

8. $2(m + 3) + 9 = -11$