Name _____ Date _____

Equations with Brackets

Way 1: multiply out

$$4(x-2)=12$$
$$4x-8=12 \mid +8$$
$$4x=20 \mid \div 4$$
$$x=5$$

Way 2: divide both sides

$$4(x-2)=12 \mid \div 4$$
$$x-2=3 \mid +2$$
$$x=5$$

Remember

Multiply every term in the bracket. **A minus in front of a bracket** changes the sign of every term: $-(x-3)=-x+3$. If one side is a product and the other is divisible by the same number, it is quicker to divide both sides.

1 ON YOUR OWN Solve.

$2(x+3)=14 \rightarrow x=$ ☐

$5(x-1)=3x+7 \rightarrow x=$ ☐

$3(2x-1)=4(x+2) \rightarrow x=$ ☐

$7-(x-2)=3x+1 \rightarrow x=$ ☐

Names (pair) _____ Date _____

2 IN PAIRS Each of you solves in one of the two ways from the example. Compare.

$6(x+1)=18 \rightarrow x=$ ☐

$-3(x-4)=9 \rightarrow x=$ ☐

3 IN PAIRS **Find the mistake** and solve correctly.

$2x-(x-5)=9 \rightarrow 2x-x-5=9 \rightarrow x=14$ **true** / **false**

Correction: _____

$3(x+2)=15 \rightarrow 3x+2=15$ **true** / **false**

Correction: _____

4 ON YOUR OWN Solve.

$4(x-1)-2(x+3)=0 \rightarrow x=$ ☐

$2(3-x)=3(x-8) \rightarrow x=$ ☐

5 ON YOUR OWN **A rectangle** has a perimeter of 30 cm, and its length is 3 cm more than its width. Let x be the width. Write an equation and work out the sides.

☐ width ☐ cm, length ☐ cm

★ ON YOUR OWN **Exit card.** $-2(x-3)=4 \rightarrow x=$ ☐