# Homework #52 ~ Solving Equations Using the Distributive Property

Directions: Solve the following equations algebraically and check. Show ALL work!

1) $3(x+2) = -9$

$3x+6=-9$

$-6 \quad -6$

$3x=-15$

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

$x=-5$

$3(x+2)=-9$

$3(-5+2)=-9$

$3(-3)=-9$

$-9=-9$ ✓

2) $-2(x-3) = 50$

$-2x+6=50$

$-6 \quad -6$

$-2x=44$

$\frac{-2x}{-2} = \frac{44}{-2}$

$x=-22$

$-2(x-3)=50$

$-2(-22-3)=50$

$-2(-25)=50$

$50=50$ ✓

3) $6 = \frac{1}{2}(2x-12)$

$6=x-6$

$+6 \quad +6$

$12=x$

$6=\frac{1}{2}(2x-12)$

$6=\frac{1}{2}(2\cdot 12-12)$

$6=\frac{1}{2}(24-12)$

$6=\frac{1}{2}(12)$

$6=6$ ✓

4) $-1(x+9) = -6$

$-1x-9=-6$

$+9 \quad +9$

$-1x=3$

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

$x=-3$

$-(x+9)=-6$

$-(-3+9)=-6$

$-6=-6$ ✓

5) $-2(y+4) = 2$

$-2y-8=2$

$+8 \quad +8$

$-2y=10$

$\frac{-2y}{-2} = \frac{10}{-2}$

$y=-5$

$-2(y+4)=2$

$-2(-5+4)=2$

$-2(-1)=2$

$2=2$ ✓

6) $3(n-1) = -10$

$3n-3=-10$

$+3 \quad +3$

$3n=-7$

$\frac{3n}{3} = \frac{-7}{3}$

$n=\frac{-7}{3}$

$3(n-1)=-10$

$3(\frac{-7}{3}-1)=-10$

$3(\frac{-10}{3})=-10$

$-10=-10$ ✓