Solving Algebraic Equations (Simplify First, *some* Parentheses)

MrB4math.com

Solve each equation.

1) $3(x-7)+5x=13+10x$

$3x-21+5x=13+10x$

$8x-21=13+10x$

$-8x \quad -8x$

$-21=13+2x$

$-13 \quad -13$

$\frac{-34}{2} = \frac{2x}{2}$

$-17=x$

2) $6=-7k+1k+3-15$

$6=-6k-12$

$+12 \quad +12$

$\frac{18}{-6} = \frac{-6k}{-6}$

$-3=k$

3) $12-4(7y-5)=-8-8y$

$12-28y+20=-8-8y$

$32-28y=-8-8y$

$+28y \quad +28y$

$32=-8+20y$

$+8 \quad +8$

$\frac{40}{20} = \frac{20y}{20}$

$2=y$

4) $6n+10-5n=0$

$1n+10=0$

$-10 \quad -10$

$n=-10$

5) $9-7x=4x-(9x-3)$

$9-7x=4x-9x+3$

$9-7x=-5x+3$

$+7x \quad +7x$

$9=2x+3$

$-3 \quad -3$

$\frac{6}{2} = \frac{2x}{2}$

$3=x$

6) $17-7=3k-13k$

$\frac{10}{-10} = \frac{-10k}{-10}$

$-1=k$

7) $2a-5(2a+8)+4=36$

$2a-10a-40+4=36$

$-8a-36=36$

$+36 \quad +36$

$\frac{-8a}{-8} = \frac{72}{-8}$

$a=-9$

8) $-6-8x+9=3-9x$

$3-8x=3-9x$

$+9x \quad +9x$

$3+1x=3$

$-3 \quad -3$

$x=0$

9) $4x+33=-8x-9+5x$

$4x+33=-3x-9$

$+3x \quad +3x$

$7x+33=-9$

$-33 \quad -33$

$\frac{7x}{7} = \frac{-42}{7}$

$x=-6$

10) $6y+5(3y-7)=20y$

$6y+15y-35=20y$

$21y-35=20y$

$-21y \quad -21y$

$\frac{-35}{-1} = \frac{-1y}{-1}$

$35=y$

11) $-7(3x-8)=56-20x$

$-21x+56=56-20x$

$+21x \quad +21x$

$56=56+1x$

$-56 \quad -56$

$0=x$

12) $9x-16+1x=14+20$

$10x-16=34$

$+16 \quad +16$

$\frac{10x}{10} = \frac{50}{10}$

$x=5$