Solve for x Day 3

- When you have a variable on both sides you still want the variable (x) on one side & everything else on the other.

ex 1 $3x+5=4x-7$

$-3x \quad -3x$

$5=x-7$

$+7 \quad +7$

$\boxed{12=x}$

ex 2 $3(2x-5)=9x+4$

$6x-15=9x+4$

$-6x \quad -6x$

$-15=3x+4$

$-4 \quad -4$

$\frac{-19}{3}=\frac{3x}{3}$

$\boxed{\frac{-19}{3}=x}$

ex 3 $-4(x-7)=5(2x+1)$

$-4x+28=10x+5$

$+4x \quad +4x$

$28=14x+5$

$-5 \quad -5$

$\frac{23}{14}=\frac{14x}{14}$

$\boxed{\frac{23}{14}=x}$

ex 4 $\frac{9x-21}{3}=x+5$

all have 3 in common

$3x-7=x+5$

$-x \quad -x$

$2x-7=5$

$+7 \quad +7$

$\frac{2x}{2}=\frac{12}{2}$

$\boxed{x=6}$

Special cases

- If you get $0=0$, that's an identity or infinite solutions
- If you get something that isn't true ($7=9$) that's no solution

ex 5 $4x+6=2(2x+3)$

$4x+6=4x+6$

$-4x \quad -4x$

$6=6$

$-6 \quad -6$

$0=0$

identity

ex 6 $6x-5=2(3x+4)$

$6x-5=6x+8$

$-6x \quad -6x$

$-5=8$

no solution