2.1 Simplify Each Side of An Equation

Eliminate Parentheses - 1st and simplify

***Look at what is directly in front of the parentheses

1. + ⟶ drop ( ) and keep signs
   * distribute 1
   $3+(x+2)$
   $3+x+2$
2. − ⟶ drop ( ) and change each sign inside the ( )
   * distribute −1
   $3-(x+2)$
   $3-x-2$
3. # ⟶ distribute
   $3(x+2)$
   $3(x)+3(2)$
   $3x+6$

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Examples:

1. $x+(x-6)=20$
   $x+x-6=20$
   $2x-6=20$
   $2x=20+6$
   $2x=26$
   $x=\frac{26}{2}$
   $\boxed{x=13}$

   Change signs Bye... Poof... Gone...

   check:
   $x+(x-6)=20$
   $13+(13-6)=20$
   true

2. $7r-(6r-5)=7$
   $7r-6r+5=7$
   $r+5=7$
   $r=7-5$
   $\boxed{r=2}$

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3. $8(c+2)=32$
   $8(c)+8(2)=32$
   $8c+16=32$
   $8c=32-16$
   $8c=16$
   $c=\frac{16}{8}$
   $\boxed{c=2}$

4. $x-(43-x)=5$
   $x-43+x=5$
   $2x-43=5$
   $2x=5+43$
   $2x=48$
   $x=\frac{48}{2}$
   $\boxed{x=24}$

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5. $5-2(x+3)=11$ (negative 2)
   $5-2(x)-2(3)=11$
   $5-2x-6=11$
   $-2x-1=11$
   $-2x=11+1$
   $-2x=12$
   $x=\frac{12}{-2}$
   $\boxed{x=-6}$

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HOMEWORK

Worksheet - HW 2.1 - Day 5

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