TOPIC: SOLVING LINEAR EQUATIONS

Strategy for Solving Linear Equations

◆ To solve ***ANY*** linear equation, *simplify* & then use *multiple* properties of equality. You can follow these steps:

EXAMPLE Solve the linear equation.

$$3(x-2)+2=x+8$$

Recall

If $a=b$, then…

$$a+c=b+c \qquad ac=bc$$

$$a-c=b-c \qquad \frac{a}{c}=\frac{b}{c}$$

(Properties of Equality)

HOW TO: Solve Linear Equations

1) Simplify both sides of the equation
- *Distribute* into ( )
- *Combine* like terms

2) Use _____ props. to **collect**:
- All *variable* terms on one side
- All *constant* terms on other side

3) Use _____ props. to **isolate** variable

4) Check solution by plugging in *orig. eqn*

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PRACTICE Solve the given linear equation. Check your solution.

$(\boldsymbol{A})$

$$2(x+3)=14$$

HOW TO: Solve Linear Equations

1) **Simplify** both sides of the equation
- *Distribute* into ( )
- *Combine* like terms

2) Use $+/-$ props. to **collect**:
- All *variable* terms on one side
- All *constant* terms on other side

3) Use $\times/\div$ props. to **isolate** variable

4) **Check** solution by plugging in *orig. eqn*

$(\boldsymbol{B})$

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

PRACTICE Solve the given linear equation. Check your solution.

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