UNIT \#6 Linear Equations and Inequalities

Step equations
Inverse operations "undo" eachothers results
ex addition and subtraction are inverse operations

WRITING
(a) a number plus 5 is 20
$x$ represents
the number $+5=20$

$$
\begin{aligned}
x+5 \vdots 20 & \text { DO THE OPPOSITE } \\
-5!-5 & \text { OPERATION } \\
x \pm 15 & \text { WHATEVER YOU TO } \\
& \\
& \text { TO I SIDE OF THE } \\
& \text { EQUAL SIGN, YOU } \\
& \text { MUST DO TO THE } \\
& \text { OTHER SIDE!!! }
\end{aligned}
$$

(b) four times a number is -32

$$
\begin{gathered}
\frac{4 x}{4}=-\frac{32}{4} \\
x=-8
\end{gathered}
$$

2 step equations
Solve then venfy each equation
(a)

$$
\begin{aligned}
3 x+4 & =-5 \\
\sqrt{4} & -4 \\
\frac{3 x}{3} & =\frac{-9}{3} \\
x & =-3
\end{aligned}
$$

verify substitute - 3 for $x$ in the original equation'

$$
\begin{aligned}
3(x)+4 & =-5 \\
3(-3)+4 & =-5 \\
-9+4 & =-5 \\
-5 & =-5
\end{aligned}
$$

(b)

$$
\begin{array}{r}
2(-2+w)=18 \\
-4+2 w=18 \\
441 \frac{2 w}{x}=\frac{22}{2} \\
\vdots=11
\end{array}
$$

$$
\text { (c) } \begin{aligned}
\frac{r}{4}+3 & =72 \\
-3 & -3 \\
4 \times \frac{r}{4} & =42 \times 4 \\
r & =168
\end{aligned}
$$

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