Solving Equations

Warm-Up

During a highly rated one hour tv show, the entertainment portion lasted 15 min longer than 4 times the ads. Write an expression to represent the situation.

HW

p. 81: 1-11 ODD
p. 88: 1-13 ODD

You Know

$5 + x = 8$

↑ What # makes this true?

$x = 3$

Today

$$\begin{array}{r} 5 + x = 8 \\ -5 \qquad -5 \\ \hline x = 3 \end{array}$$

$$\begin{array}{r} m - 9 = 29 \\ +9 \qquad +9 \\ \hline m = 38 \end{array}$$

*Think "what's happening to m?" How do we undo it?

Check! $38 - 9 = 29$

$29 = 29$ ✓

$$\begin{array}{r} 21 + Q = -18 \\ -21 \qquad -21 \\ \hline Q = -39 \end{array}$$

What's happening to Q? $+21$ Undo it.

$$\begin{array}{r} h + \frac{3}{4} = -\frac{1}{8} \\ -\frac{3}{4} \qquad -\frac{3}{4} \\ \hline h = -\frac{1}{8} - \frac{\cancel{3}6}{\cancel{4}8} \end{array}$$

What's happening to h? $+\frac{3}{4}$ Undo it.

$h = -\frac{7}{8}$

★ $3\left(\frac{t}{3}\right)=(7)3$ What's happening to t? ÷3 undo it.

$\frac{3}{1}\cdot\frac{t}{3}=7\cdot 3$

$\frac{\cancel{3}t}{\cancel{3}}=21$

$\boxed{t=21}$

$\frac{(21)}{3}=7$ Check

$7=7$ ✓

★ $\frac{n}{3}=-\frac{2}{5}$

$\frac{3}{1}\left(\frac{n}{3}\right)=\frac{-2}{5}\cdot\frac{3}{1}$

$\frac{3n}{3}=\frac{-6}{5}$

$n=-6/5$

★ $\frac{13s}{13}=\frac{195}{13}$

$\boxed{s=15}$

Check

$13(15)=195$?

$195=195$ ✓

★ $\frac{-3x}{-3}=\frac{12}{-3}$

$\boxed{x=-4}$

$-3(-4)=12$?

$12=12$ ✓

$\frac{3}{5}=\frac{2}{3}+a$ $\quad$ $x-7=55$ $\quad$ $-18=\frac{3}{5}m$

$\frac{y}{32}=\frac{-5}{8}$ $\quad$ $14p=42$ $\quad$ $16-(-Q)=83$