1-Step Equations: Justify

$$26 = 8 + x$$
$$-8 \quad -8$$
$$18 = x$$
$$x = 18$$
Subtraction Property of Equality

$$x - 12 = 19$$
$$[+12 \quad +12]$$
$$x = 31$$
Addition Property of Equality

$$\frac{11x}{11} = \frac{-44}{11}$$
$$x = -4$$
Division Property of Equality

$$2 \cdot \frac{x}{2} = 18 \cdot 2$$
$$x = 36$$
Multiplication Property of Equality

2-Step Equations:

Justify

$8x + 7 = 31$ $\quad -7 \quad -7$ Sub. $\dfrac{8x}{8} = \dfrac{24}{8}$ Div $x = 3$	$68 = 12x + 8$ $\quad -8 \quad\quad -8$ Sub $\dfrac{60}{12} = \dfrac{12x}{12}$ Div $5 = x$
$-9x + 1 = -80$ $\quad -1 \quad -1$ Sub $\dfrac{-9x}{-9} = \dfrac{-81}{-9}$ Div $x = 9$	$9x - 7 = -7$ $\quad +7 \quad +7$ Add $\dfrac{9x}{9} = \dfrac{0}{9}$ Div $x = 0$
$\dfrac{m}{9} - 1 = -2$ $\quad +1 \quad +1$ add $\dfrac{m}{9} = -1$ $m = -9$ mult.	$6 = \dfrac{a}{4} + 2$ $-2 \quad\quad -2$ sub $4 = \dfrac{a}{4}$ $16 = a$ mult
$\dfrac{(n+5)}{-16} = -1 \cdot -16$ mult. $n + 5 = 16$ sub $n = 11$	distrib. $2(n+5) = -2$ $2n + 10 = -2$ sub $-10 \quad -10$ $2n = -12$ div	dist div $\dfrac{10(k-9)}{10} = \dfrac{-10}{10}$ add $\quad k - 9 = -1$ $\quad +9 \quad +9$

Multi-Step Equations: Justify

$2(n+5)=-2$	$10(k-9)=-10$

$6 = \textcircled{1} - 2n \textcircled{+5}$ CLT

$6 = -2n + 6$ sub

$-6 \qquad -6$

$\dfrac{0}{-2} = \dfrac{-2n}{-2}$ div

$0 = n$

$8x - 2 = -9 + 7x$

$-7x \qquad\qquad -7x$ sub.

$x - 2 = -9$

$\quad +2 \quad +2$ add

$x = -7$

$5p - 14 = 8p + 4$

$-4(-6x-3) = 12$

$\dfrac{-4(-6x-3)}{4} = \dfrac{12}{4}$

$-6x - 3 = -3$

$+3 \quad +3$

$-6x = 0$

$-4(-6x-3) = 12$ dist.

$+24x + 12 = 12$

$-12 \quad -12$ sub

$\dfrac{24x}{24} = \dfrac{0}{24}$ div

$x = 0$

Proportion Equations:

$$\frac{10}{8} = \frac{n}{10}$$

$$10 \cdot \frac{10}{8} = \frac{n}{10} \cdot 10$$

$$\frac{100}{8} = \frac{8n}{8}$$

$$\frac{100}{8} = n$$

$$12.5 = n$$

$$\frac{7}{n} = \frac{8}{7}$$

$$49 = 8n$$

$$n \cdot \frac{7}{n} = \frac{8}{7} \cdot n$$

$$\frac{7}{8} \cdot 7 = \frac{8}{7} \cdot n \cdot \frac{7}{8}$$

$$\frac{49}{8} = n$$

$$\frac{6}{(x-1)} = \frac{9}{7}$$

$$42 = 9(x-1) \quad \text{dist}$$

$$42 = 9x - 9 \quad \text{add}$$

$$+9 \qquad +9$$

$$51 = 9x \quad \text{div}$$

$$\frac{51}{9} = x$$

$$9 \cdot \frac{5}{6} = \frac{7n+9}{9} \cdot 9$$

$$\frac{45}{6} = 7n + 9$$

$$7.5 = 7n + 9$$

$$-9 \qquad -9$$

$$\frac{-2.5}{7} = \frac{7n}{7}$$

$$n = -.35$$

Attachments

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