

Name:

Deconstructing Equations Homework

KEY

1. $4x + 2 = 10$

Construct story of x	Deconstruct	Solving Process	Verification
$x = \underline{\quad}$ ① Mult by 4 ② Add 2 ③ Solution is 10 when $x = \underline{\quad}$	$4x + 2 = 10$ ① Subt 2 ② Divide by 4 ③ $x = \underline{\quad}$ when solution is 10	$4x + 2 = 10$ $\quad -2 \quad -2$ $\frac{4x}{4} = \frac{8}{4}$ $x = 2$	$4(2) + 2$ $8 + 2$ 10

2. $-10 + 5p = -25$

$5p - 10 = -25$

Construct story of p	Deconstruct	Solving Process	Verification
$p = \underline{\quad}$ ① Mult by 5 ② Subt 10 ③ Solution is -25 when $p = \underline{\quad}$	$5p - 10 = -25$ ① Add 10 ② Divide by 5 ③ $p = \underline{\quad}$ when solution is -25	$5p - 10 = -25$ $\quad +10 \quad +10$ $\frac{5p}{5} = \frac{-15}{5}$ $p = -3$	$5(-3) - 10$ $-15 - 10$ -25

3. $\frac{3}{2} - 4x = \frac{27}{2}$

$-4x + \frac{3}{2} = \frac{27}{2}$

Construct story of x	Deconstruct	Solving Process	Verification
$x = \underline{\quad}$ ① Mult by (-4) ② Add $\frac{3}{2}$ ③ Solution is $\frac{27}{2}$ when $x = \underline{\quad}$	$-4x + \frac{3}{2} = \frac{27}{2}$ ① Subt $\frac{3}{2}$ ② Divide by (-4) ③ $x = \underline{\quad}$ when solution is $\frac{27}{2}$	$-4x + \frac{3}{2} = \frac{27}{2}$ $\quad -\frac{3}{2} = -\frac{3}{2}$ $-4x = \frac{24}{2}$ $\frac{-4x}{-4} = \frac{12}{-4}$ $x = -3$	$-4(-3) + \frac{3}{2}$ $12 + \frac{3}{2}$ $\frac{24}{2} + \frac{3}{2}$ $\frac{27}{2}$

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4. $-3(2 + n) = 15 \rightarrow -3(n + 2) = 15$

Construct story of n	Deconstruct	Solving Process	Verification
① Add 2 ② Mult by -3	① Divide by -3 ② Subt 2 * \uparrow & inverse	$\begin{array}{r} -3(n+2) = 15 \\ \underline{-3} \quad \underline{-3} \\ n+2 = -5 \\ \underline{-2} \quad \underline{-2} \\ n = -7 \end{array}$	$\begin{array}{l} -3(n+2) \\ -3(-7+2) \\ -3(-5) \\ 15 \end{array}$

5. $5 + \frac{-4+x}{2} = 18 \rightarrow \frac{x-4}{2} + 5 = 18$

Construct story of x	Deconstruct	Solving Process	Verification
① Subt 4 ② Divide by 2 ③ Add 5	① Subt 5 ② Mult by 2 ③ Add 4 \uparrow & inverse	$\begin{array}{r} \frac{x-4}{2} + 5 = 18 \\ \underline{-5} \quad \underline{-5} \\ \frac{x-4}{2} = 13 \\ 2\left(\frac{x-4}{2}\right) = 2(13) \\ x-4 = 26 \\ \underline{+4} \quad \underline{+4} \\ x = 30 \end{array}$	$\begin{array}{l} \frac{x-4}{2} + 5 \\ \frac{30-4}{2} + 5 \\ \frac{26}{2} + 5 \\ 13 + 5 \\ 18 \end{array}$

6. $3(w - 6) = -21$

Construct story of w	Deconstruct	Solving Process	Verification
① Subt 6 ② Mult 3	① Divide by 3 ② Add 6	$\begin{array}{r} 3(w-6) = -21 \\ \underline{3} \quad \underline{3} \\ w-6 = -7 \\ \underline{+6} \quad \underline{+6} \\ w = -1 \end{array}$	$\begin{array}{l} 3(w-6) \\ 3(-1-6) \\ 3(-7) \\ -21 \end{array}$