

Answer Key

Algebra.U2.C1.Lesson.A Creating and Solving Linear Equations

A1.U2.C1.A.05.hw.equations

HOMEWORK

POE = Prop. of Equality
CLT = Combine Like Terms

Homework # 1	
<p>1. $5x + 2 = 3(2x - 1)$</p> $\begin{array}{r} 5x + 2 = 6x - 3 \\ -5x \quad -5x \\ \hline 2 = x - 3 \\ +3 \quad +3 \\ \hline 5 = x \end{array}$	<p>Reasoning</p> <p>Distributive Property Subtraction POE Addition POE</p>
<p>2. $2(x + 9) = \frac{5x}{2}$</p> $\begin{array}{r} 2x + 18 = 5x \\ -2x \quad -2x \\ \hline 18 = 3x \\ \frac{18}{3} = \frac{3x}{3} \\ \hline 6 = x \end{array}$	<p>Reasoning</p> <p>Multiplication POE Distributive Prop. Subtraction POE Division POE</p>
<p>3. $7 - 9x = 5(x + 3) + 2x$</p> $\begin{array}{r} 7 - 9x = 5x + 15 + 2x \\ 7 - 9x = 7x + 15 \\ +9x \quad +9x \\ \hline 7 = 16x + 15 \\ -15 \quad -15 \\ \hline -8 = 16x \\ \frac{-8}{16} = \frac{16x}{16} \\ \hline x = -\frac{1}{2} \end{array}$	<p>Reasoning</p> <p>Distributive Prop. CLT Addition POE Subtraction POE Division POE Simplify.</p>
<p>4. $3x + 1 = 7x - 11$</p> $\begin{array}{r} -3x \quad -3x \\ \hline 1 = 4x - 11 \\ +11 \quad +11 \\ \hline 12 = 4x \\ \frac{12}{4} = \frac{4x}{4} \\ \hline x = 3 \end{array}$	<p>Reasoning</p> <p>Subtraction POE Addition POE Division POE</p>
<p>5. $x + 3(x + 1) = 2x + 7$</p> $\begin{array}{r} x + 3x + 3 = 2x + 7 \\ 4x + 3 = 2x + 7 \\ -2x \quad -2x \\ \hline 2x + 3 = 7 \\ -3 \quad -3 \\ \hline 2x = 4 \\ \frac{2x}{2} = \frac{4}{2} \\ \hline x = 2 \end{array}$	<p>Reasoning</p> <p>Distributive Prop. CLT Subtraction POE Subtraction POE Division POE</p>
<p>6. $5x - 2(3x + 2) = 5(x - 2)$</p> $\begin{array}{r} 5x - 6x - 4 = 5x - 10 \\ -x - 4 = 5x - 10 \\ +x \quad +x \\ \hline -4 = 6x - 10 \\ +10 \quad +10 \\ \hline 6 = 6x \\ \frac{6}{6} = \frac{6x}{6} \\ \hline x = 1 \end{array}$	<p>Reasoning</p> <p>Distributive POE CLT Addition POE Addition POE Division POE</p>
<p>7. Brad is one year less than twice as old as Naomi. Their combined age is 29. $N = \text{Naomi}$</p> $B = 2N - 1$ $\frac{2N - 1}{\text{Brad's Age}} + \frac{N}{\text{Naomi's Age}} = 29$	<p>8. Jessica bought 12 rose plants and 10 lily plants for her garden. Each rose plant costs \$5 more than each lily plant. She spent a total of \$148. How much does lily cost? Rose?</p> <p>$l = 5 = \text{price of roses}$ $l = \text{price of lilies}$</p> $\frac{12(l + 5)}{\text{Roses}} + \frac{10l}{\text{Lilies}} = 148$

$$\begin{array}{r} 3N - 1 = 29 \\ +1 \quad +1 \\ \hline 3N = 30 \\ \frac{3N}{3} = \frac{30}{3} \\ \hline N = 10 \end{array}$$

Naomi = 10 yrs old

Brad is $2 \cdot 10 - 1 = 19$ yrs. old

$$\begin{array}{r} 12l + 60 + 10l = 148 \\ 22l + 60 = 148 \\ -60 \quad -60 \\ \hline 22l = 88 \\ \frac{22l}{22} = \frac{88}{22} \\ \hline l = 4 \end{array}$$

$l = 4$

\$4 = lilies

$$\begin{array}{r} 22l = 88 \\ \frac{22l}{22} = \frac{88}{22} \\ \hline l = 4 \end{array}$$

4 + 5 = \$9 for roses