

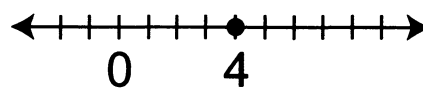
SOLUTION STATEMENTS

$$\begin{array}{c} \vdots \\ x = 4 \end{array}$$

Roster

$$S = \{4\}$$

Graph



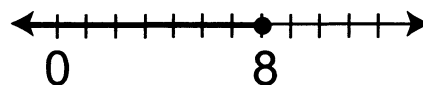
$$\begin{array}{c} \vdots \\ n \leq 8 \end{array}$$

~~Roster~~

Rule

$$S = \{n \mid n \leq 8\}$$

Graph



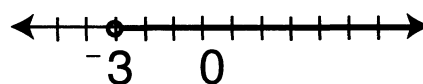
$$\begin{array}{c} \vdots \\ z > -3 \end{array}$$

~~Roster~~

Rule

$$S = \{z \mid z > -3\}$$

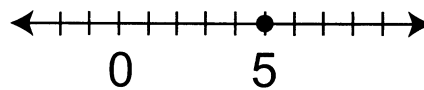
Graph



MAKING ZEROS

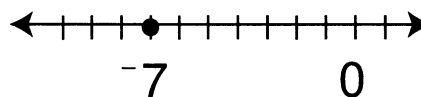
$$\begin{array}{rcl}
 & n + 3 & = 8 \\
 \text{Add } ^{-}3 & n + 3 + ^{-}3 & = 8 + ^{-}3 \\
 & n & = 5 \checkmark \\
 \text{Check} & (5) + 3 & = 8 \\
 & 8 & = 8 \quad \text{True}
 \end{array}$$

$$S = \{5\}$$



$$\begin{array}{rcl}
 & m - 4 & = -11 \\
 \text{Add } ^{+}4 & m - 4 + ^{+}4 & = -11 + ^{+}4 \\
 & m & = -7 \checkmark \\
 \text{Check} & (-7) - 4 & = -11 \\
 & -11 & = -11 \quad \text{True}
 \end{array}$$

$$S = \{-7\}$$



MAKING ONES

$$5x = 35$$

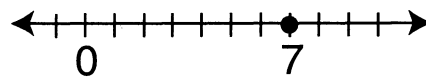
Multiply $\frac{1}{5}$ $\frac{1}{5}(5x) = \frac{1}{5}(35)$

$$1x = \frac{35}{5} \text{ or } 7 \checkmark$$

Check $5(7) = 35$

$$35 = 35 \quad \text{True}$$

$$S = \{7\}$$



$$\frac{z}{3} = 2$$

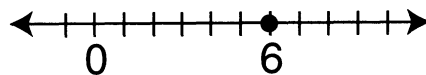
Multiply $\frac{3}{1}$ $\frac{3}{1}\left(\frac{z}{3}\right) = \frac{3}{1}(2)$

$$1z = \frac{6}{1} \text{ or } 6 \checkmark$$

Check $\frac{(6)}{3} = 2$

$$2 = 2 \quad \text{True}$$

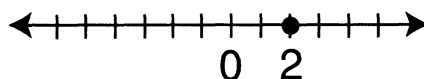
$$S = \{6\}$$



COMBINATIONS

$$\begin{array}{rcl}
 & 3w + 4 & = 10 \\
 \text{Add } ^{-}4 & 3w + 4 + ^{-}4 & = 10 + ^{-}4 \\
 & 3w & = 6 \\
 \text{Multiply } \frac{1}{3} & \frac{1}{3}(3w) & = \frac{1}{3}(6) \\
 & 1w & = \frac{6}{3} \text{ or } 2 \\
 \text{Check} & 3(2) + 4 & = 10 \\
 & 6 + 4 & = 10 \\
 & 10 & = 10 \qquad \text{True}
 \end{array}$$

$$S = \{2\}$$



Or ...

$$\begin{array}{rcl}
 & 3w + 4 & = 10 \\
 \text{Multiply } \frac{1}{3} & \frac{1}{3}(3w + 4) & = \frac{1}{3}(10) \\
 & w + \frac{4}{3} & = \frac{10}{3} \\
 \text{Add } \frac{-4}{3} & w + \frac{4}{3} + \frac{-4}{3} & = \frac{10}{3} + \frac{-4}{3} \\
 & w & = \frac{6}{3} \text{ or } 2 \checkmark
 \end{array}$$

COMPLICATIONS

“Grouping Symbols”

$$2(4x - 5) = 14$$

Distribute $8x - 10 = 14$

Add 10 $8x - 10 + +10 = 14 + +10$

$$8x = 24$$

Multiply $\frac{1}{8}$ $\frac{1}{8}(8x) = \frac{1}{8}(24)$

$$1x = \frac{24}{8} \text{ or } 3 \checkmark$$

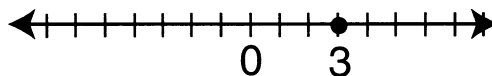
Check $2(4[3] - 5) = 14$

$$2(12 - 5) = 14$$

$$2(7) = 14$$

$$14 = 14 \quad \text{True}$$

$$S = \{3\}$$



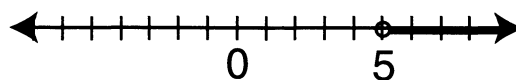
“DISTRIBUTE”

COMPLICATIONS

“Like Terms on the Same Side”

$$\begin{array}{rcl}
 & 7m - 3m + 2 & > 17 + 5 \\
 \text{C.L.T.} & 4m + 2 & > 22 \\
 \text{Add } -2 & 4m + 2 +^{-}2 & > 22 +^{-}2 \\
 & 4m & > 20 \\
 \text{Multiply } \frac{1}{4} & \frac{1}{4}(4m) & > \frac{1}{4}(20) \\
 & 1m & > \frac{20}{4} \text{ or } 5 \checkmark \\
 \\
 \text{Check} & 7(6) - 3(6) + 2 & > 17 + 5 \\
 & 42 - 18 + 2 & > 22 \\
 & 24 + 2 & > 22 \\
 & 26 & > 22 \quad \text{True}
 \end{array}$$

$$S = \{m \mid m > 5\}$$



“COLLECT LIKE TERMS”

COMPLICATIONS

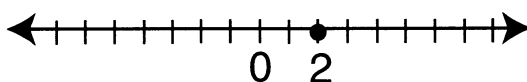
“Placeholders on Both Sides”

	$3z - 11$	=	$9 - 7z$
Add $-3z$	$3z - 11 + -3z$	=	$9 - 7z + -3z$
	-11	=	$9 - 10z$
Add -9	$-11 + -9$	=	$9 - 10z + -9$
	-20	=	$-10z$
Multiply $\frac{1}{-10}$	$\frac{1}{-10}(-20)$	=	$\frac{1}{-10}(-10z)$
	$\frac{-20}{-10}$ or 2	=	$1z \checkmark$

Or...

	$3z - 11$	=	$9 - 7z$
Add $7z$	$3z - 11 + +7z$	=	$9 - 7z + +7z$
	$10z - 11$	=	9
Add 11	$10z - 11 + +11$	=	$9 + +11$
	$10z$	=	20
Multiply $\frac{1}{10}$	$\frac{1}{10}(10z)$	=	$\frac{1}{10}(20)$
	$1z$	=	$\frac{20}{10}$ or 2 \checkmark

$S = \{2\}$



“ADD THE OPPOSITE OF ONE GROUP”