M8 - 10.8 - Combining Like Terms Notes

Combine the like terms: Add/Subtract like Terms

$x + x = 2x$ $\quad x + 2x = 3x$ $\quad 2x + 4x = 6x$ $\quad 6x - 4x = 2x$ $\quad 2x - 5x = -3x$ $\quad x - x = 0$

Solve for x

$x = 1 + 2$

$x = 3$

Combine Like Terms

$x + x = 4$

$2x = 4$

$\frac{2x}{2} = \frac{4}{2}$

$x = 2$

Check Answer

$x + x = 4$

$2 + 2 = 4$

$4 = 4$ ✓

$3x + 3x = 4 + 8$

$6x = 12$

$\frac{6x}{6} = \frac{12}{6}$

$x = 2$

Check Answer

$3x + 3x = 4 + 8$

$3(2) + 3(2) = 4 + 8$

$6 + 6 = 12$

$12 = 12$ ✓

Solve for x, by combining like terms by adding and subtracting to both sides

$2x = 4 + x$

$2x = 4 + x$

$-x \quad -x$

$x = 4$

Work on the complicated side!

Subtract x from both sides

Check Answer

$2x = 4 + x$

$2(4) = 4 + (4)$

$8 = 8$ ✓

Short Form

$2x = 4 + x$

$x = 4$

$2x = 4 + x$

$-4 \quad -4$

$2x - 4 = x$

$-2x \quad -2x$

$-4 = -x$

$\frac{-4}{-1} = \frac{-x}{-1}$

$x = 4$

Not Optimal!!!

Solve for x, by combining like terms

$3x + 2 = 2x + 6$

$3x + 2 = 2x + 6$

$-2 \quad -2$

$3x = 2x + 4$

$-2x \quad -2x$

$x = 4$

Subtract 2 from both sides

Subtract 2x from both sides

Check Answer

$3x + 2 = 2x + 6$

$3(4) + 2 = 2(4) + 6$

$12 + 2 = 8 + 6$

$14 = 14$ ✓

Short Form

$3x + 2 = 2x + 6$

$x = 4$

Solve for x, by combining like terms

$3x - 1 + 4x = x + 11$

$3x + 4x - 1 = x + 11$

$7x - 1 = x + 11$

$+1 \quad +1$

$7x = x + 12$

$-x \quad -x$

$6x = 12$

$\frac{6x}{6} = \frac{12}{6}$

$x = 2$

Rearrange Order of Terms (Signs!!!)

Combine Like Terms

Algebra

Check Answer

$3x - 1 + 4x = x + 11$

$3(2) - 1 + 4(2) = (2) + 11$

$6 - 1 + 8 = 2 + 11$

$13 = 13$ ✓

Short Form

$3x - 1 + 4x = x + 11$

$6x = 12$

$x = 2$