

SETUP:

Combine like terms means:

$$4+x+5=$$

$$4+x+5x=$$

$$4+x+y+2=$$

Constants are known numbers we can combine

Variables are unknown numbers. We can't combine them unless they are the same.

*ALTERNATIVE SETUP:*

Review solving equations with variables on both sides to make the same point about combining like terms.

| Problem                                   | Answers          | Alternative                           |
|-------------------------------------------|------------------|---------------------------------------|
| Combine like terms:<br>$5x + 4 - 2x + 3y$ | $5x + 4 + 3y$    | $3x + 5 + 2y + 1 + 7y = 2x + 6 + 9y$  |
| $8 - 5y + 5x + 1 + 2y$                    | $9 + 5x - 3y$    | $6x + 5y - 2x + 2y + 4 = 7y + 4x + 4$ |
| Solve for x:<br>$X+5 = 10$                | $X = 5$          |                                       |
| $X + 5 = Y$                               | $X = y - 5$      |                                       |
| $X + Y = 10$                              | $X = 10 - y$     | $A+B = -5$ , solve for B              |
| $X+2y = 10$                               | $x=10-2y$        | $x-3y=42 \quad x = 3y+52$             |
| $5x = Y$                                  | $X = y/5$        |                                       |
| $ax = y$                                  | $X = y/a$        | $PV = NRT$ solve for T                |
| $5ax=y$                                   | $x=y/5a$         |                                       |
| $Ax = y + 2$                              | $X = (y+2)/a$    |                                       |
| $2x - 6 = 16$                             | $X = 5$          |                                       |
| $2x - y = 16$                             | $X = (16 + y)/2$ |                                       |
| $ax - 2y = C$                             | $X = (c+2y)/a$   |                                       |
| $2x - 3y = 16$ , for x                    | $(16 + 3y)/2$    | $2w+2l=P$ , solve for l               |
| $2x - 3y = 16$ , for y                    | $(16 - 2x)/-3$   | $-2x+3y = 16$ , for y                 |
| $ax + by = c$ , for y                     | $(c-ax)/(-b)$    |                                       |
| $(a+y)/d=h$ , for y                       | $y=dh-a$         |                                       |
| $(ec+g)/r=t$ for c                        | $c=(rt-g)/e$     |                                       |

**Consolidation from the bottom:**

Order?

Solve for x:

$$x + 3y = 10$$

$$-3x + 4y = -8$$

$$(nx+h)/a = 12$$