

Notes-Day 2: Combine Like Terms

1) -Term: A single number or variable, or the product of several numbers or variables, separated from another term by a + or - sign in an overall expression.

-Like Terms: Have exactly the same variables.

Simplify means getting all the like terms together

Steps 1 and 2

Solving meansto (Start Memorizing these 5 Steps!)

- 1 - Distributive Property - to Eliminate Parenthesis
- 2 - Combine Like Terms - get same variable with same exponent together
- 3 - Get all Variables (x's) on one side of the equal sign
- 4 - Get all Constant numbers on the other side of the equal sign
- 5 - Multiply or Divide to get Variable (x) all by itself.

Simplify each expression.

2) $1 + 10x - 7$
 $\frac{1}{10x} \frac{-7}{-7}$
 1 $10x$ -7
 $10x - 6$

4) $-3n + 9n$

$6n$

6) $-6(-9 + 4x)$

$+54 - 24x$
 $y = -24x + 54$

8) $-2(1 + 2r)$

$-2 - 4r$

$-4r - 2$

3) $1 - 5n - 4$

$-5n - 3$

5) $5a - 9a - 9a$
 belongs to

$-4a$

7) $-7(6 + 4k)$

$-42 - 28k$

$-28k - 42$

9) $-(1 - 7x)$

$-1 + 7x$

$+7x - 1$

$$10) 6(k-3) - 7$$

$$6k - 18 - 7$$

$$\boxed{6k - 25}$$

$$11) -3 - 1(8 - 10m)$$

$$-3 - 8 + 10m$$

$$\boxed{10m - 11}$$

$$\begin{aligned} -3 - 8 &= (-3) + (-8) \\ &= -11 \neq 24 \end{aligned}$$

$$12) 2 - 9(n-3)$$

$$2 - 9n + 27$$

$$\boxed{-9n + 29}$$

$$13) 5 + 10(6 + 9n)$$

$$5 + 60 + 90n$$

$$\boxed{90n + 65}$$

$$14) -9(3a+5) + 9(-9a-6)$$

$$-27a - 45 - 81a - 54$$

$$\boxed{-107a - 99}$$

$$15) 3(3-3m) - 9(2-4m)$$

$$9 - 9m - 18 + 36m$$

$$\boxed{27m - 9}$$

$$\begin{aligned} P &\neq P^2 \\ S &\neq S^2 \\ S &\neq 25 \end{aligned}$$

$$16) 6(4v-3) + 4(8v+1)$$

$$24v - 18 + 32v + 4$$

$$\boxed{56v - 14}$$

$$17) -4p(5p-10) + 8p(10-7p)$$

$$-20p^2 + 40p + 80p - 56p^2$$

$$-76p^2 + 120p$$

$$18) \frac{5}{3}r + \frac{2}{3} + \frac{1}{2}r \quad \text{Common Denominator}$$

$$\frac{10r}{6} + \frac{4}{6} + \frac{3r}{6}$$

$$\frac{13r}{6} + \frac{4}{6} \quad \leftarrow \text{reduce}$$

$$\boxed{\frac{13r}{6} + \frac{2}{3}}$$

$$19) \frac{3}{2}x + 1 - x$$

$$\frac{3x}{2} + \frac{2}{2} - \frac{2x}{2}$$

$$\frac{x}{2} + \frac{2}{2}$$

$$\boxed{\frac{x}{2} + 1}$$

$$20) -\frac{7}{3}\left(a - \frac{7}{2}\right)$$

$$\left(-\frac{7}{3} \cdot a\right) + \left(-\frac{7}{3} \cdot -\frac{7}{2}\right)$$

$$\boxed{-\frac{7a}{3} + \frac{49}{6}}$$

$$21) -\frac{5}{2}\left(\frac{5}{3}x + \frac{3}{2}\right)$$

$$\left(-\frac{5}{2} \cdot \frac{5x}{3}\right) + \left(-\frac{5}{2} \cdot \frac{3}{2}\right)$$

$$\boxed{-\frac{25x}{6} + \frac{-15}{6}}$$