

Use this variable expression:

$$-14w^2 - 18wx + 4x^2 - 30$$

- How many terms are there? 4
- What do we call the numbers -14, -18, and 4? Coefficients
- What do we call the number -30? Constant

$$-14w^2 - 18wx + 4x^2 - 30$$

Individual terms are separated with  
ADDITION and SUBTRACTON

When you multiply or divide numbers and  
variables you create 1 term.

**Term:**

could be:

- just a number
- just a variable
- the product of more than one variable
- the product of a number and a variable or variables.

2nd Hour Rearrange these terms so that like terms are  
grouped together.

$$\begin{array}{ccccccc} & & kj^2 & & 100j^2k^2 & & 5k \\ 144j & & & & & & 3.7k^2 \\ -1.8k^2j^2 & 32jk & 144j^2 & & & & \\ j & 0.55kj & & k4j & -51.9j^2 & & \\ & & -43k & & -3k^2 & & \\ & 18k^2j & & -4j & & 4,896jk^2 & \\ & -kj & & & 15k^2 & & \end{array}$$

See the next page for  
the correct grouping

5th hour

Rearrange these terms so that like terms are grouped together.

$$\begin{matrix} 144j^2 \\ -51.9j^2 \end{matrix}$$

$$\begin{matrix} 100j^2k^2 \\ -1.8k^2j^2 \end{matrix}$$

$$\begin{matrix} 4,896jk^2 \\ 18k^2j \end{matrix}$$

$$\begin{matrix} 3.7k^2 \\ 15k^2 - 3k^2 \end{matrix}$$

$$\begin{matrix} -kj \\ 32jk \\ 0.55kj \\ k4j \end{matrix}$$

$$kj^2$$

$$\begin{matrix} 144j \\ j - 4j \end{matrix}$$

$$\begin{matrix} -43k & 5k \end{matrix}$$

### Combining like terms:

Finding terms that are alike then adding and subtracting them using the coefficients so that there is only one term with each type of variable part.

### Like Terms:

Terms that have both of the following conditions:

- Same variable(s)
- Same exponents on those variable(s)
- **What doesn't matter?** The coefficients

Simplify each.

half sheet

1.  $4(x + 7) - 3(2x - 4)$

$$4x + 28 - 6x + 12$$

$$-2x + 40$$

2.  $-6a^2b + ab^2 - 4b^2a + 7ab - 2a^2b - 5ab^2$

$-8a^2b - 8ab^2 + 7ab$

The image shows a handwritten algebraic simplification. The original expression is  $-6a^2b + ab^2 - 4b^2a + 7ab - 2a^2b - 5ab^2$ . The terms are grouped and color-coded:  $-6a^2b$  and  $-2a^2b$  are circled in purple;  $ab^2$  and  $-5ab^2$  are circled in yellow;  $-4b^2a$  is circled in yellow; and  $7ab$  is circled in blue. Arrows indicate the combination of like terms: a purple arrow from  $-6a^2b$  and  $-2a^2b$  points to  $-8a^2b$ ; a yellow arrow from  $ab^2$  and  $-5ab^2$  points to  $-8ab^2$ ; and a blue arrow from  $7ab$  points to  $+7ab$ . The final simplified expression is  $-8a^2b - 8ab^2 + 7ab$ .