Combine Like Terms and Expand Terms- Step-by-Step Lesson

Combine the Like Terms and Expand Terms Problem:

9xy + 4x^2y + 4xy + 3x^2y

Explanation:

9xy + 4x^2y + 4xy + 3x^2y
Note the terms that are alike.
We see two common terms:  a) x^2y  b) xy
9xy + 4x^2y + 4xy + 3x^2y   Put the like parts together.
(9xy + 4xy) (4x^2y + 3x^2y)   Combine them by adding.
13xy + 7x^2y
Combine Like Terms and Expand Terms - Guided Lesson

Complete the following problems:

1) \(6x^2 + 3x + 4x + 3x^2\)

2) \(4(x + 9)\)

3) \(3x(x^2 + 12)\)
Combine Like Terms and Expand Terms - Guided Lesson Explanation

In all the problems you first find terms that are the same and have the same variables. Combine those variables by adding them together.

**Explanation #1**

6x^2 + 3x + 4x + 3x^2  
Put like parts together.

(6x^2 + 3x^2) (3x + 4x)  
Combine them by adding.

9x^2 + 7x

**Explanation #2**

4(x + 9)  
multiply all terms by 4

(4 x x) + (4 x 9)

4x + 36

**Explanation #3**

3x(x^2 + 12)  
multiply all terms by 3x

(3x x x^2) (3x x 12)

3x^3 + 36x
Combine Like Terms and Expand Terms - Independent Practice Worksheet

Complete all the problems.

1. $10xy + 11x^2y + 11xy + 10x^2y$

2. $7xy + 15x^2y + 15xy + 5x^2y$

3. $16x^2 + 5x + 8x + 4x^2$

4. $9x^2 + 4x + 10x + 7x^2$

5. $15(x + 2)$

6. $11(x + 4)$

7. $5x(x^2 + 7)$

8. $9x(x^2 + 11)$

9. $7xy + 12x^2y + 12xy + 5x^2y$

10. $3x^2 + 4x + 6x + 2x^2$
Combine Like Terms and Expand Terms - Matching Worksheet

Write the letter of the answer that matches the problem.

1. \(15xy + 7x^2y + 7xy + 4x^2y\)
   ______
   a. \(9x + 45\)

2. \(21xy + 18x^2y + 18xy + 14x^2y\)
   ______
   b. \(18x + 54\)

3. \(12x^2 + 9x + 8x + 5x^2\)
   ______
   c. \(39xy + 32x^2y\)

4. \(21x^2 + 18x + 17x + 15x^2\)
   ______
   d. \(11x^3 + 66x\)

5. \(20(x + 5)\)
   ______
   e. \(36x^2 + 35x\)

6. \(18(x + 3)\)
   ______
   f. \(22xy + 11x^2y\)

7. \(15x(x^2 + 5)\)
   ______
   g. \(20x + 100\)

8. \(11x(x^2 + 6)\)
   ______
   h. \(15x^3 + 75x\)

9. \(9(x + 5)\)
   ______
   i. \(10x^3 + 50x\)

10. \(10x(x^2 + 5)\)
    ______
    j. \(17x^2 + 17x\)