

# Multiplying Binomials–1

**Rule:** *To find the product of two binomials, multiply each term in one binomial by each term in the other binomial*

**Example:** Multiply:  $(x + 1)(x + 2)$

**Solution:** Step 1: multiply each term in the 1<sup>st</sup> binomial  
by the 2<sup>nd</sup> binomial  
Step 2: Use the distributive property  
Step 3: Combine like terms

$$\begin{aligned} &x(x + 2) + 1(x + 2) \\ &x \cdot x + 2 \cdot x + 1 \cdot x + 1 \cdot 2 \\ &\mathbf{x^2 + 3x + 2} \end{aligned}$$

**It may help to see this written vertically:**

**Example:** Multiply:  $(x + 1)(x + 2)$

**Solution:** (each term in one binomial is multiplied by each term in the other binomial)

$$\begin{array}{r} x + 1 \\ \underline{x + 2} \\ 2x + 2 \\ \underline{x^2 + 1x} \\ \mathbf{x^2 + 3x + 2} \end{array}$$

**Do the following exercises using an appropriate method:**

1.  $(x - 2)(x + 6)$

2.  $(x + 12)(x + 3)$

3.  $(x + 9)(x - 5)$

4.  $(x - 8)(x + 1)$

5.  $(x + 7)(x - 6)$

6.  $(x + 11)(x + 11)$

7.  $(x - 2)(x - 3)$

8.  $(x - 9)(x + 8)$

9.  $(x + 12)(x + 5)$

10.  $(x - 6)(x - 1)$

11.  $(x + 10)(x + 3)$

12.  $(x - 6)(x - 6)$

13.  $(x + 3)(x + 3)$

14.  $(x - 1)(x + 20)$

15.  $(x - 10)(x - 10)$

16.  $(x - 12)(x + 8)$

17.  $(x + 6)(x - 6)$

18.  $(x + 3)(x + 1)$

19.  $(x + 11)(x - 5)$

20.  $(x + 10)(x - 9)$

21.  $(x + 10)(x - 10)$

22.  $(x - 3)(x + 9)$

23.  $(x + 4)(x - 7)$

24.  $(x - 1)(x + 1)$

1.  $x^2 + 4x - 12$   
2.  $x^2 + 15x + 36$   
3.  $x^2 + 4x - 45$   
4.  $x^2 - 7x - 8$   
5.  $x^2 + x - 42$   
6.  $x^2 + 22x + 121$

7.  $x^2 - 5x + 6$   
8.  $x^2 - x - 72$   
9.  $x^2 + 17x + 60$   
10.  $x^2 - 7x + 6$   
11.  $x^2 + 13x + 30$   
12.  $x^2 - 12x + 36$

13.  $x^2 + 6x + 9$   
14.  $x^2 + 19x - 20$   
15.  $x^2 - 20x + 100$   
16.  $x^2 - 4x - 96$   
17.  $x^2 - 36$   
18.  $x^2 + 4x + 3$

19.  $x^2 + 6x - 55$   
20.  $x^2 + x - 90$   
21.  $x^2 - 100$   
22.  $x^2 + 6x - 27$   
23.  $x^2 - 3x - 28$   
24.  $x^2 - 1$