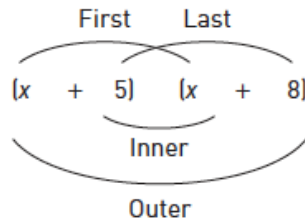


## WORKSHEET MULTIPLYING TWO BINOMIALS

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FOIL is an acronym that stands for *first*, *outer*, *inner*, *last*. It can help you to multiply two binomials. The diagram below illustrates how to use FOIL to multiply  $(x + 5)(x + 8)$ .



- The first terms of each binomial are  $x$  and  $x$ .
- The outer terms are  $x$  and  $8$ .
- The inner terms are  $5$  and  $x$ .
- The last terms are  $5$  and  $8$ .

After you have identified the correct terms, find the product of each pair. Then find the sum.

### EXAMPLE

$$(x + 5)(x + 8) = x^2 + 8x + 5x + 40 = x^2 + 13x + 40$$

If any terms in the binomials are subtracted, rewrite the subtraction as addition and add the opposite. Find the product of each pair, then find the sum.

### EXAMPLE

$$(x - 1)(x + 7) = (x + (-1))(x + 7) = x^2 + 7x + (-1)(x) + (-1)(7) = x^2 + 6x - 7$$

**DIRECTIONS:** Find the product.

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

2.  $(x + 8)(x - 7)$

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

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

5.  $(-2x + 3)(x - 8)$

6.  $(x^2 + 1)(x + 3)$

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

8.  $(x - 3y)(2x + y)$