Agenda

Homework:

- Multiplying Polynomials WS (#1-24 EVEN)
- AM

Materials:

- Notebook
- Calculator (if needed)

Do Now:

1) Take out homework
2) Multiply the following in your NOTEBOOK:

$$2ab (7a^4b^2 + a^5b - 2a)$$

$$2ab(7a^4b^2 + a^5b - 2a)$$

Homework Review

Set up TOOLBOX (PMN) notes:

Topic: Multiplying Polynomials

Be sure to update Table of Contents

Toolbox

- Multiplying Polynomials:
  1. Multiply each term from the first polynomial to every term of the second polynomial
  2. Combine like terms to simplify

- Shortcuts:
  - If multiplying two BINOMIALS, use FOIL:

$$(x + 3)(x - 2) = (x)(x) + (-2)(x) + (3)(x) + (3)(-2)$$

Product of First terms   Product of Outer terms   Product of Inner terms   Product of Last terms

$$= x^2 - 2x + 3x - 6$$

$$= x^2 + x - 6$$

How do you multiply 24 * 21 by hand?

$$
\begin{array}{r}
2\,4 \\
\times\ \ 2\,1 \\
\hline
2\,4 \\
+\ ^{1}4\,8 \\
\hline
5\,0\,4
\end{array}
$$

What is the product of $(2x + 3)(x + 5)$?

- **Vertical** Method:

$$2x + 3$$
$$(x) \quad x + 5$$
$$\overline{}$$
$$10x + 15$$
$$(+) \, 2x^2 + 3x$$
$$\overline{}$$
$$2x^2 + 13x + 15$$

Both in Standard Form

What is the product of $(2x + 3)(x + 5)$?

- **Horizontal** Method:

$$(2x + 3)(x + 5)$$

$$2x^2 + 10x + 3x + 15$$

$$2x^2 + 13x + 15$$

What is the product of (2x + 3)(x + 5)?

- **FOIL Method** (Only works with BINOMIALS):

$$(2x + 3)(x + 5)$$

First: $(2x)(x)$ = $2x^2$

Outer: $(2x)(5)$ = $10x$

Inner: $(3)(x)$ = $3x$

$13x$

Last: $(3)(5)$ = 15

$+$ $+$

$(2x + 3)(x + 5)$

$(2x + 3)(x + 5)$

$(2x + 3)(x + 5)$

$(2x + 3)(x + 5)$

Find the product of $(6x + 5)(2x^2 − 3x − 5)$

- Which method will you choose?

- Vertical Method?

CAN, but may get complicated

$$2x^2 − 3x − 5$$
$$\underline{(x)\ \ 6x + 5}$$

Find the product of
$$(6x + 5)(2x^2 - 3x - 5)$$

- Which method will you choose?

- Horizontal Method?

$$(6x + 5)(2x^2 - 3x - 5)$$

$$6x(2x^2 - 3x - 5) + 5(2x^2 - 3x - 5)$$

CAN, but may
get complicated
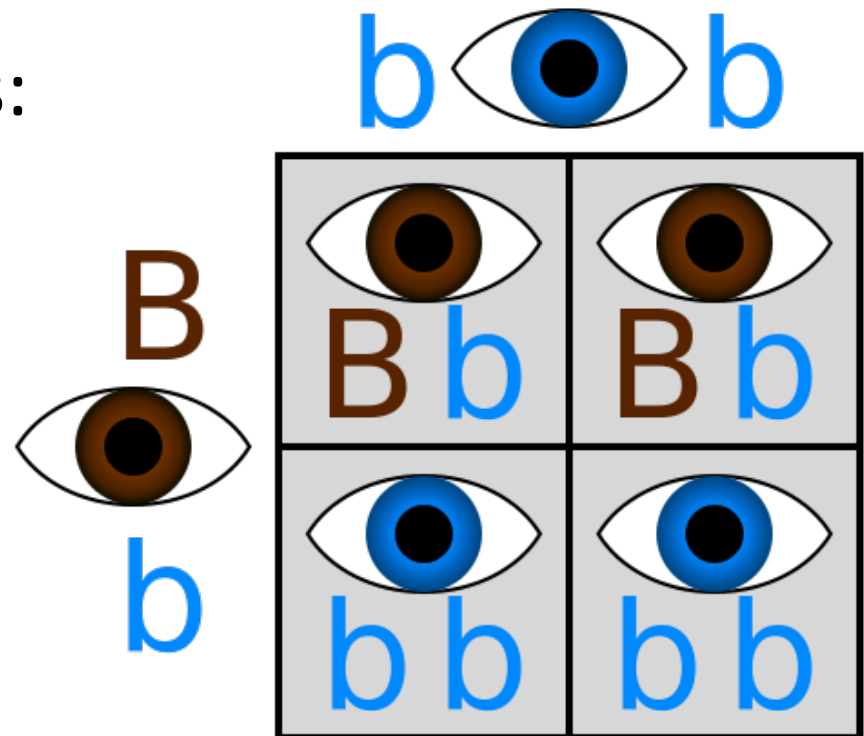
Find the product of
$(6x + 5)(2x^2 - 3x - 5)$

- Which method will you choose?

- FOIL method?

CANNOT since $(2x^2 - 3x - 5)$ is NOT a binomial

Find the product of (6x + 5)(2x² − 3x − 5)

Find the product of
$(6x + 5)(2x^2 - 3x - 5)$

- Which method will you choose?

- How about the **BOX** method?

- Recall Punnet Squares:

Punnet Squares are used to find ALL possible allele combinations (genotypes)

Find the product of
$(6x + 5)(2x^2 - 3x - 5)$

	$2x^2$	$-3x$	-5
$6x$	$12x^3$	$-18x^2$	$-30x$
$+5$	$10x^2$	$-15x$	-25

$$12x^3 - 8x^2 - 45x - 25$$