

Starter

1 FEB 2018

Multiply and simplify.

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

$$3x^2 \cdot -4x \quad -12x^3$$

$$3x^2 \cdot 2 \quad 6x^2$$

$$-12x^3 + 6x^2$$

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

$$-3y \cdot y \quad -3y^2$$

$$-3y \cdot 8 \quad -24y$$

$$-2 \cdot y \quad -2y$$

$$-2 \cdot 8 \quad -16$$

$$-3y^2 - 26y - 16$$

YOU DO: $-2x^2(-4 - 8x)$

$$8x^2 + 16x^3$$

$$16x^3 + 8x^2$$

Multiplying Polynomials

Distribute each term in the first factor to each term in the second factor. Then, combine like terms.

IDO: $(2x-3)(x^2-4x+5)$

$2x \cdot x^2$

$2x^3$
$-8x$
$10x$

$-3 \cdot x^2$

$-3x^2$
$12x$
-15

$2x \cdot -4x$

$-8x$
$10x$

$-3 \cdot -4x$

$12x$
-15

$2x \cdot 5$

$10x$

$-3 \cdot 5$

-15

$2x^3 - 11x^2 + 22x - 15$

You can also multiply polynomials using the BOX (also called the TABLE) method.

Ex.

$(7x+2)(5x+1)$

	$5x$	1
$7x$	$35x^2$	$7x$
2	$10x$	2

$35x^2 + 17x + 2$

WE DO: $(7x^2 - 3)(x^2 - 2x - 4)$

$1x^2$	$7x^4$	$-3x^2$
$-2x$	$-14x^3$	$6x$
-4	$-28x^2$	12

$7x^4 - 14x^3 - 3x^2 + 6x + 12$

Your turn: $(4x - 5)(2x + 3)$

	$4x$	-5
$2x$	$8x^2$	$-10x$
3	$12x$	-15

$8x^2 + 2x - 15$

— = + -

You Do:

Day 4: multiply
 $(3x-2)^2$

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

3x	$9x^2$	$-6x$
-2	$-6x$	4

$9x^2 - 12x + 4$

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

3x	$9x^2$	$-6x$
2	$6x$	-4

$9x^2 - 4$

difference
of
perfect
squares

3. $(2x^3 + 3x - 1)(5x^2 + 2x + 1)$ **Draw the box, if needed.

$X \cdot X = X^2$

	$2x^3$	$3x$	-1
$5x^2$	$10x^5$	$15x^3$	$-5x^2$
$2x$	$4x^4$	$6x^2$	$-2x$
1	$2x^3$	$3x$	-1

$10x^5 + 4x^4 + 17x^3 + x^2 + x - 1$

Special Case When you see a binomial squared, write it out (expand) and then multiply.

IDO: $(y+6)^2 = (y+6)(y+6) =$

$(y+6)^2 = (y+6)(y+6)$

y	y^2	$6y$
6	$6y$	36

$y^2 + 12y + 36$

WE DO: $(3a-5)^2 =$

$$(3a-5)(3a-5)$$