

EVALUATE:

① $x = -5 \quad y = \frac{2}{3}$

$$(4xy^2 + 2xy) - (2xy^2 + 2y + 2xy^2)$$

$$(4xy^2) + 2xy - (2xy^2) - 2y - (2xy^2)$$

$$2xy - 2y$$

$$2(-5)\left(\frac{2}{3}\right) - 2\left(\frac{2}{3}\right)$$

$$-\frac{20}{3} - \frac{4}{3} = -\frac{24}{3} = \boxed{-8}$$

OR BE ALERT TO GCF'S

$$2xy - 2y$$

$$2y(x - 1)$$

$$2\left(\frac{2}{3}\right)(-5 - 1)$$

$$\frac{4}{3}(-6) = -\frac{24}{3} = \boxed{-8} \checkmark$$

• Homework Review

HW Practice

Date

Period

Simplify each expression.

1) $(7x^2 + 4x^3) - (3x^3 + 2x^2)$

$x^3 + 5x^2$

3) $(3r^2 + 4r) - (5r - 2r^4 - 8r^2)$

$2r^4 + 11r^2 - r$

5) $(-4n^3 + 5n) - (8n^2 - 2n^3 - 7n)$

$-2n^3 - 8n^2 + 12n$

7) $(-6 - 5n^3 - 6n) - (4n - 7n^4 + 6n^3)$

$7n^4 - 11n^3 - 10n - 6$

9) $-5x^3y - 7xy^4 + 2xy^3 - 7xy^3 + 6xy^4 - x^3y$

$-xy^4 - 6x^3y - 5xy^3$

11) $\left(-\frac{8}{3} + 2v\right) - \left(1 - \frac{7}{2}v\right)$

$\frac{11}{2}v - \frac{11}{3}$

13) $\left(-\frac{1}{2} - \frac{13}{7}b^2\right) - \left(\frac{8}{7}b^2 - \frac{7}{5}\right)$

$-3b^2 + \frac{9}{10}$

15) $(-1.7x^2 + 4.24) - (6.6x^2 + 4.7)$

$-8.3x^2 - 0.46$

2) $(5r + 7r^4) + (2r + 2r^4)$

$9r^4 + 7r$

4) $(-x^3 - 7x^2) - (2x^3 + 5x^2 + 3x^4)$

$-3x^4 - 3x^3 - 12x^2$

6) $(-7 + 5b^4) - (-6b^2 + 7b^4 - 1)$

$-2b^4 + 6b^2 - 6$

8) $(4x - 5 + 8x^2) - (-7x^2 + 3 - 2x)$

$15x^2 + 6x - 8$

10) $-3b^2 - 6ab^2 + 6a^2 - 3b^2 - 2ab^2 - a^2$

$-8ab^2 - 6b^2 + 5a^2$

12) $(-2 + 2k) + \left(\frac{5}{3} + 2k\right)$

$4k + \frac{1}{3}$

14) $\left(\frac{22}{7}a - \frac{3}{2}a^2\right) - \left(\frac{9}{8}a - \frac{7}{5}a^2\right)$

$-\frac{1}{10}a^2 + \frac{113}{56}a$

16) $(3.7n^2 - 3.3n) - (-3.9n - 4.62n^2)$

$8.32n^2 + 0.6n$

Multiplying Polynomials

$$\textcircled{\text{EX}} (3x^2y)(4x^5y^3) = 12x^7y^4$$

6 Exponent Rules $\Rightarrow$ MR $a^N \cdot a^M = a^{N+M}$

$$\text{DR } \frac{a^N}{a^M} = a^{N-M}$$

$$\text{ZER } a^0 = 1 \text{ EXCEPT } 0^0 = 0$$

$$\text{NER } a^{-N} = \frac{1}{a^N}$$

$$\text{or } \frac{1}{a^{-N}} = a^N$$

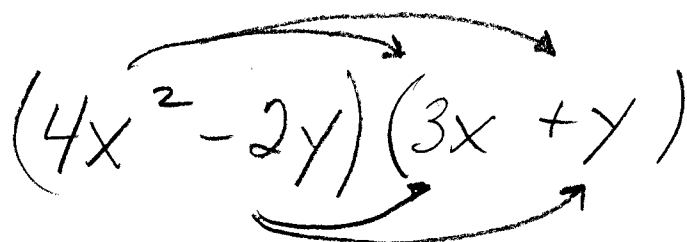
$$\text{PPR } (a^N)^M = a^{N \cdot M}$$

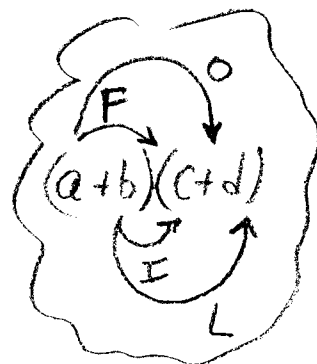
$$\text{GPR } \left(\frac{ab}{cd} \right)^N = \frac{a^N b^N}{c^N d^N}$$

Memorize Handout!

$$\begin{aligned} \textcircled{\text{EX}} (7x^{-3}y^4)(-xyz^0) &= -7x^{-2}y^4 \cdot 1 \\ &= \boxed{\frac{-7y^4}{x^2}} \end{aligned}$$

Ex $(4x^2 - 2y)(3x + y)$

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




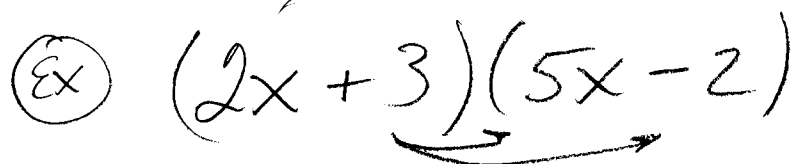
$$12x^3 + 4x^2y - 6xy - 2y^2$$

↑↑ ↑↑
ALPHABETICAL ORDER UNLESS
BETTER REASON TO ORDER

OR $2(6x^3 + 2x^2y - 3xy - y^2)$

↑
descending order by degree is preferred

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



$$10x^2 - 4x + 15x - 6$$

$$10x^2 + 11x - 6$$

A (binomial)(trinomial) or bigger works better with a vertical layout of the distributive property multiplications.

⑤ $(2x^2 + 3x + 2)(x^2 + 5x - 6)$

$$\begin{array}{r} 2x^4 + 10x^3 - 12x^2 \\ + 3x^3 + 15x^2 - 18x \\ + 2x^2 + 10x - 12 \end{array}$$

$$\boxed{2x^4 + 13x^3 + 5x^2 - 8x - 12}$$

Conjugates $\Rightarrow a+b$ AND $a-b$

(EX)

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

$$25x^2 - 15x + 15x - 9$$

$$\boxed{25x^2 - 9}$$

↑

DOS $\Rightarrow$ A Difference of Perfect Squares
(subtraction)

$$a^2 - b^2 = (a+b)(a-b)$$

$$\text{or } (a-b)(a+b)$$

because order of multiplication
is NOT important.

(EX)

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

$$= \boxed{4x^2 - 1}$$

• HW $\Rightarrow$ FINISH Practice Worksheet (evens)

HW - Multiplying Polynomials

Date _____ Period _____

Find each product.

odds=classwork
evens=homework

1) $4(7x - 7)$

2) $4n^2(8n + 3)$

3) $(7a + 8)(8a + 8)$

4) $(3k - 5)(k + 6)$

5) $(4x - 7)(4x + 7)$

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

7) $(8n - 4)(8n - 1)$

8) $(3m + 1)(7m - 6)$

9) $(5p + 6)(5p^2 + 7p - 1)$

10) $(8x^2 + 3x - 7)(4x^2 + 5x - 1)$

11) $\left(\frac{3}{2}n + \frac{5}{2}\right)\left(2n + \frac{3}{2}\right)$

12) $\left(\frac{14}{5}m + 3\right)\left(-\frac{3}{2}m - \frac{7}{5}\right)$

13) $(8r - 6)(8r + 6)$

14) $(3x + 8)(3x - 8)$