

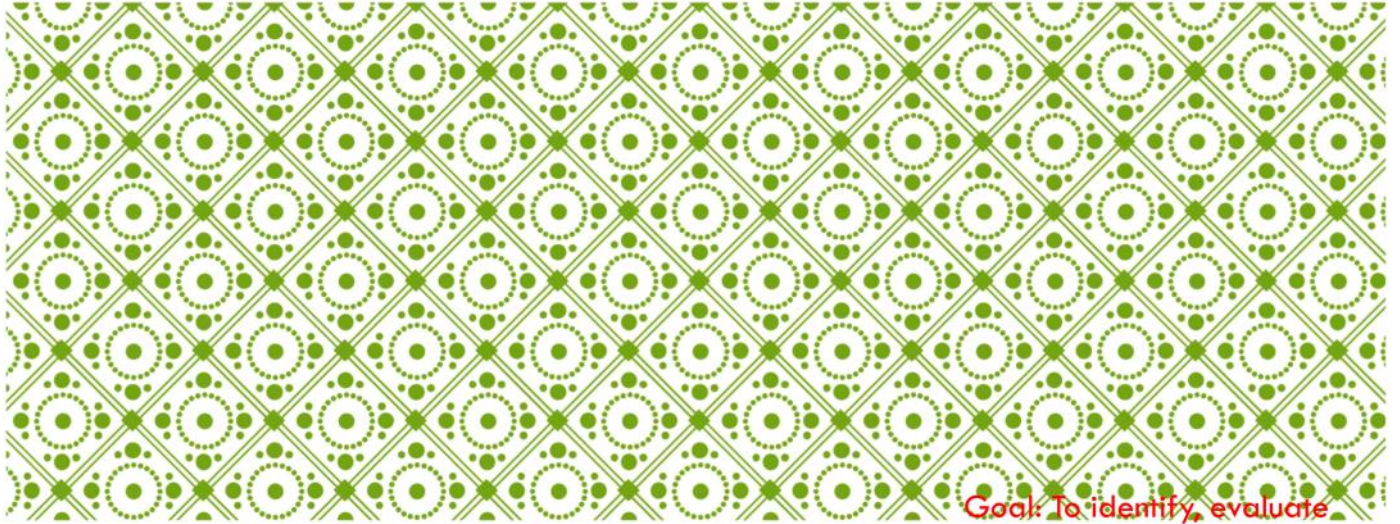
! DAILY QUEST:

Add or Subtract Polynomials

$$1) (3x^4 + 5x^3 - 4) - (2x^2 - 4x^3 + 9)$$

$3x^4 + 5x^3 - 4 - 2x^2 + 4x^3 - 9$

$$3x^4 + 9x^3 - 2x^2 - 13$$



LESSON 14.3

MULTIPLY POLYNOMIALS

EVALUATE EXPRESSIONS

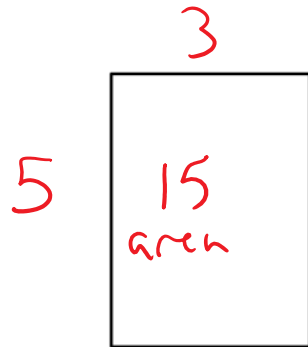
Goal: To identify, evaluate and use operations with expressions/polynomials.

Obj: SWBAT multiply polynomials.

Obj: SWBAT evaluate expressions.

PROBLEM 1:

The length of the rectangle is 5 inches and the width is 3 inches. What is the area of the rectangle?



PROBLEM 1A:

Multiply.

$$\underbrace{-4x^2}_{\text{monomial}} (\underbrace{6x^5}_{\text{monomial}}) = -24x^7$$

$$\begin{array}{|l} \hline 6x^5 \\ \hline -4x^2 \left| \begin{array}{c} -24x^7 \\ \hline \end{array} \right. \\ \hline \end{array}$$

$$3x^4(2x^7)$$

$$\begin{array}{|l} \hline 2x^7 \\ \hline 3x^4 \left| \begin{array}{c} 6x^{11} \\ \hline \end{array} \right. \\ \hline \end{array}$$

PROBLEM 2:

Multiply.

$$5(\underline{3x^2} - \underline{8}) = 15x^2 - 40$$

monomial →

binomial

| | | |
|-----|---------|-------|
| | $3x^2$ | -8 |
| 5 | $15x^2$ | -40 |

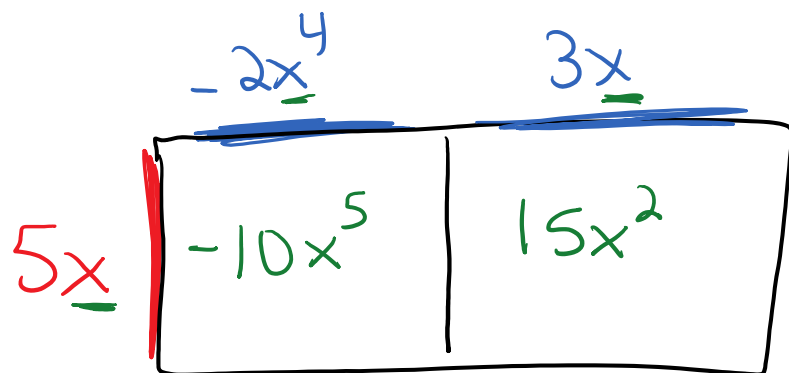
PROBLEM 2A:

Multiply.

5x (-2x⁴ + 3x)
 binomial

monomial →

$= -10x^5 + 15x^2$



PROBLEM 2C:

Multiply.

$$\begin{array}{l} 4x^6(-3x^2 - 9) \\ \hline -12x^8 - 36x^6 \end{array}$$

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

| | |
|----------|----------|
| $-12x^8$ | $-36x^6$ |
|----------|----------|

PROBLEM 3:

Multiply.

$$\underline{5x^3}(3x^3 - 4x + 2)$$

$$15x^6 - 20x^4 + 10x^3$$

 $5x^3$

| | | |
|---------|----------|---------|
| $3x^3$ | $-4x$ | 2 |
| $15x^6$ | $-20x^4$ | $10x^3$ |

PROBLEM 3A:

Multiply.

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

PROBLEM 3B:

Multiply.

$$-3x^4 (2x^2 - x + 6)$$

PROBLEM 4:

Evaluate the expression when $x = 4$ and $y = 5$

$$\begin{aligned}
 & xy + (y - x)^3 \\
 & (4)(5) + (5 - 4)^3 \\
 & (4)(5) + (1)^3 \\
 & (4)(5) + 1 \\
 & 20 + 1 \\
 & \boxed{21}
 \end{aligned}$$

P
E
L to R {M/D
D/M
L to R {A/S
S/A

$$\begin{aligned}
 & 10x \div 2y + 9 \\
 & 10(4) \div 2(5) + 9 \\
 & 40 \div 2(5) + 9 \\
 & 20(5) + 9 \\
 & 100 + 9 \\
 & \boxed{109}
 \end{aligned}$$

PROBLEM 4A:

Evaluate the expression when $x = -4$ and $y = 5$

$$\begin{aligned} & xy - (y + 3y) \\ & (-4)(5) - (5 + 3(5)) \\ & (-4)(5) - (5 + 15) \\ & -20 - 20 \\ & -40 \end{aligned}$$

$$\begin{aligned} & 2x^2 + (10 - y)^2 \\ & 2(-4)^2 + (10 - 5)^2 \\ & 2(-4)^2 + 5^2 \\ & 2(16) + 25 \\ & 32 + 25 \\ & 57 \end{aligned}$$

PROBLEM 4B:

Evaluate the expression when $x = 6$ and $y = 2$

$$y + x^2 - yx$$