

# Warmup:

Name each polynomial by degree and number of terms.

1)  $6m$

- A) linear binomial
- B) quadratic binomial
- C) quadratic monomial
- D) linear monomial

2)  $10n^2 + 8n + 3$

- A) linear binomial
- B) linear trinomial
- C) quadratic trinomial
- D) quadratic binomial

3)  $r + 1$

- A) linear binomial
- B) quadratic trinomial
- C) linear trinomial
- D) quadratic binomial

4)  $10x^2 - 9x$

- A) linear trinomial
- B) quadratic binomial
- C) quadratic trinomial
- D) linear binomial

**Simplify each expression.**

5)  $(8r - 6r^3) + (2r^3 - 4r + 7r^4)$

A)  $7r^4 - 4r^3 + 4r$

B)  $7r^4 - 4r^3 + r$

C)  $7r^4 - 4r^3 + 9r$

D)  $7r^4 + 8r^3 + 9r$

6)  $(3m^2 - 8) + (8m^2 + 7m^3 + 5)$

A)  $7m^3 - 5m^2 - 3$

B)  $-7m^3 - 5m^2 + 13$

C)  $7m^3 - 5m^2 - 13$

D)  $-7m^3 + 11m - 13$

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

A)  $8x^4 - 7x^2 + 5x$

B)  $8x^4 - 7x^2 + 11x$

C)  $8x^4 - 6x^2 + 5x$

D)  $8x^4 + 8x^2 + 5x$

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

A)  $2a^3 + 6a^2 + 9$

B)  $2a^3 + 6a^2 + 1$

C)  $2a^3 + 10a^2 + 1$

D)  $2a^3 + 10a^2 + 9$

# HW #4 Key

Find each product.

1)  $6(x - 7)$

$$6x - 42$$

2)  $8m(m + 2)$

$$8m^2 + 16m$$

3)  $3a^2(3a^2 - 4a + 8)$

$$9a^4 - 12a^3 + 24a^2$$

4)  $7v^4(3v^2 - 8v + 7)$

$$21v^6 - 56v^5 + 49v^4$$

5)  $(n-1)(6n+3)$

	$n$	$-1$	
$6n$	$6n^2$	$-6n$	$= 6n^2 - 3n - 3$
$+3$	$3n$	$-3$	

6)  $(4x-4)(3x+1)$

	$4x$	$-4$	
$3x$	$12x^2$	$-12x$	$= 12x^2 - 8x - 4$
$+1$	$4x$	$-4$	

7)  $(2n-7)(8n+8)$

	$2n$	$-7$	
$8n$	$16n^2$	$-56n$	$= 16n^2 - 40n - 56$
$+8$	$16n$	$-56$	

8)  $(n+3)(5n-6)$

	$n$	$+3$	
$5n$	$5n^2$	$15n$	$= 5n^2 + 9n - 18$
$-6$	$-6n$	$-18$	

9)  $(7x+2)(4x-4)$

$7x \quad + \quad 2$

$x$	$28x^2$	$8x$
$4$	$-28x$	$-8$

 $= 28x^2 - 20x - 8$

10)  $(2r-5)(r-7)$

$2r \quad -5$

$r$	$2r^2$	$-5r$
$-7$	$-14r$	$35$

 $= 2r^2 - 19r + 35$

11)  $(7a-3)(8a+4)$

$7a \quad -3$

$8a$	$56a^2$	$-24a$
$4$	$+28a$	$-12$

 $= 56a^2 + 4a - 12$

12)  $(3x-2)(8x+3)$

$3x \quad -2$

$8x$	$24x^2$	$-16x$
$+3$	$9x$	$-6$

 $= 24x^2 - 7x - 6$

13)  $(2b - 5)(4b + 1)$

$$\begin{array}{r}
 2b \quad -5 \\
 4b \left| \begin{array}{|c|c|} \hline 8b^2 & -20b \\ \hline 2b & -5 \\ \hline \end{array} \right. = 8b^2 - 18b - 5 \\
 +1
 \end{array}$$

14)  $(2n + 5)(2n + 6)$

$$\begin{array}{r}
 2n \quad +5 \\
 2n \left| \begin{array}{|c|c|} \hline 4n^2 & 10n \\ \hline 12n & 30 \\ \hline \end{array} \right. = 4n^2 + 22n + 30 \\
 +6
 \end{array}$$

15)  $(8r + 2)(7r^2 - 4r + 2)$

$$\begin{array}{r}
 8r \quad + 2 \\
 7r^2 \left| \begin{array}{|c|c|} \hline 56r^3 & 14r^2 \\ \hline -32r^2 & -8r \\ \hline 16r & 4 \\ \hline \end{array} \right. = 56r^3 - 18r^2 + 8r + 4 \\
 -4r \\
 +2
 \end{array}$$

16)  $(6x - 6)(3x^2 + x - 2) = 18x^3 - 12x^2 - 18x + 12$

$$\begin{array}{r}
 6x \quad - 6 \\
 3x^2 \left| \begin{array}{|c|c|} \hline 18x^3 & -18x^2 \\ \hline 6x^2 & -6x \\ \hline -12x & +12 \\ \hline \end{array} \right. \\
 +x \\
 -2
 \end{array}$$

# Cumulative Practice Plus a Little Extra

# E.Q.

# How do we multiply polynomials together?

## GEORGIA STANDARDS OF EXCELLENCE

### Perform arithmetic operations on polynomials

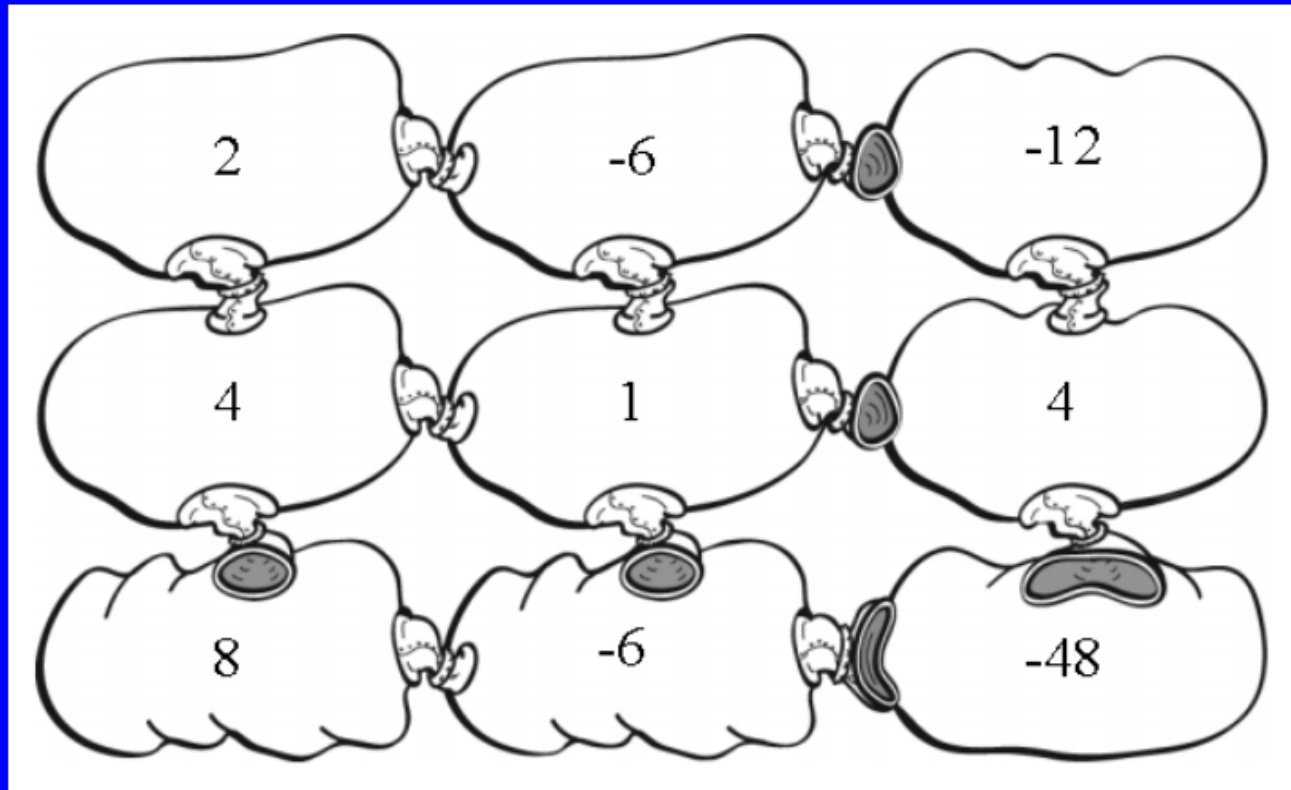
**MGSE9–12.A.APR.1 Add, subtract, and multiply polynomials; understand that polynomials form a system analogous to the integers in that they are closed under these operations.**

### Interpret the structure of expressions

**MGSE9–12.A.SSE.1a Interpret parts of an expression, such as terms, factors, and coefficients, in context.**



Can you find the pattern to the number puzzle below?



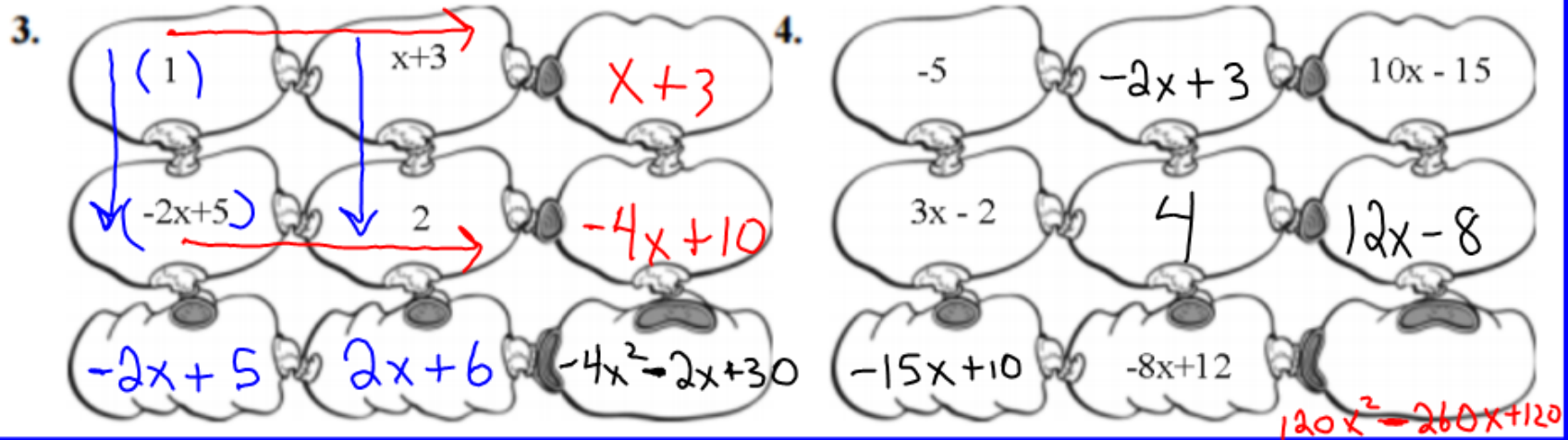
Now try filling in the empty spaces for these:

1.

5	-7	-35
10	2	20
50	-14	-700

2.

3	-5	-15
-8	-2	16
-24	10	-240

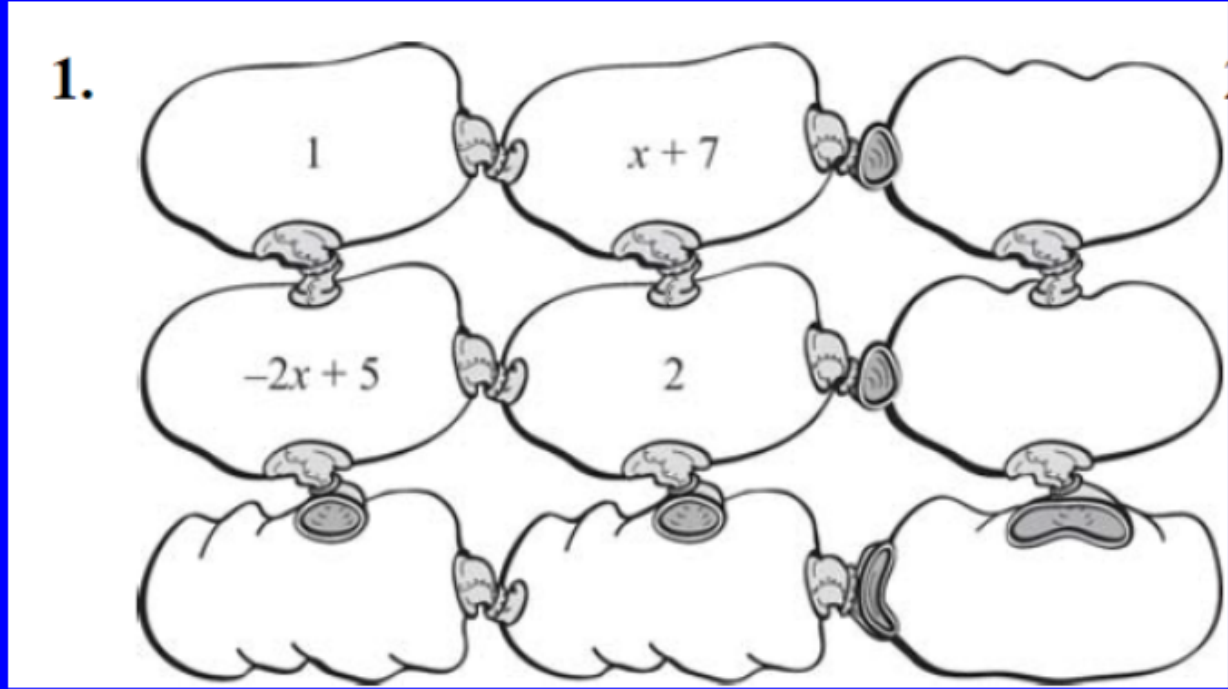


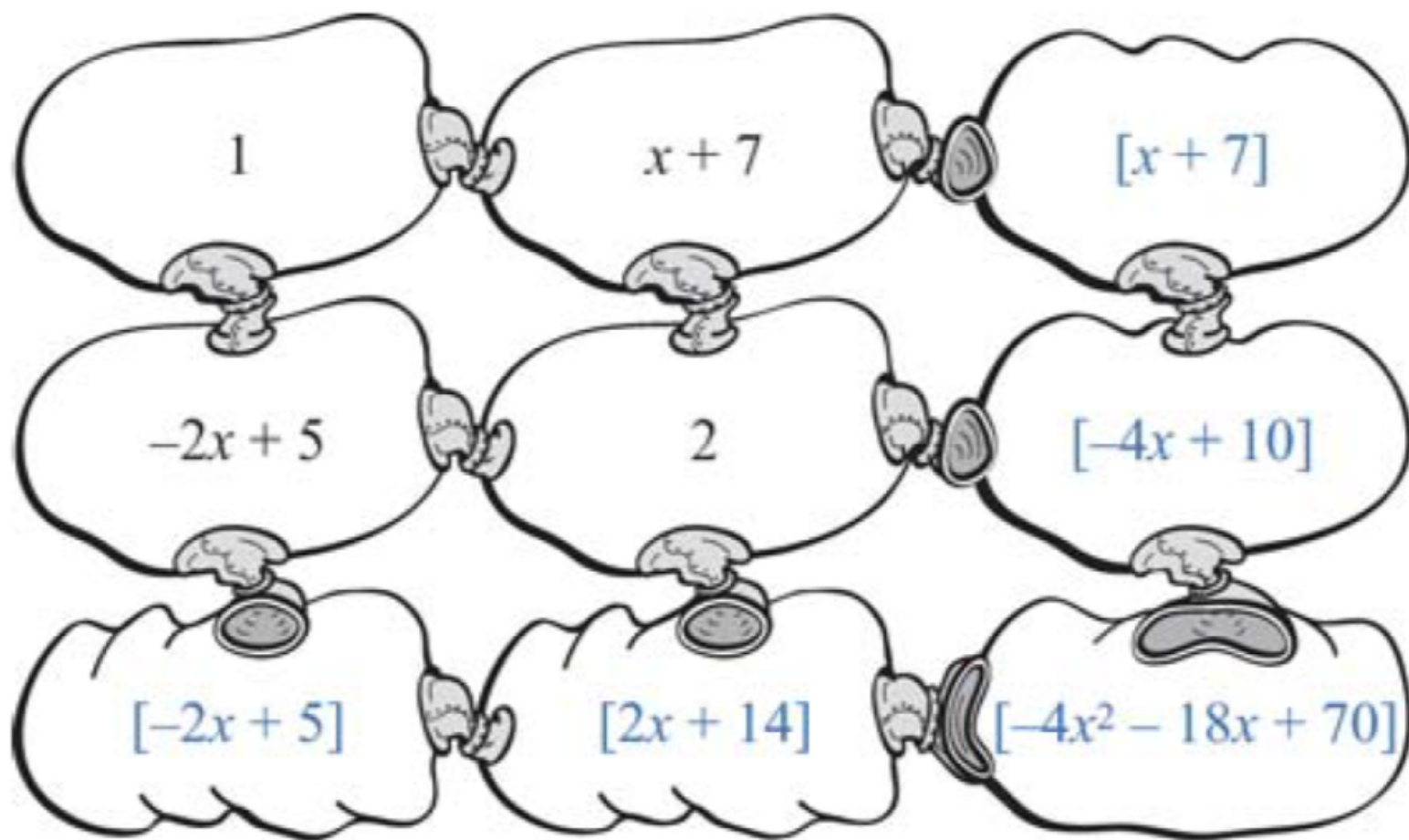
$1(-2x+5)$        $2(-2x+5)$   
 $2(x+3)$        $(-2x+5)(2x+6)$

	$10x$	$-15$
$12x$	$120x^2$	$-180x$
$-8$	$-80x$	$+120$

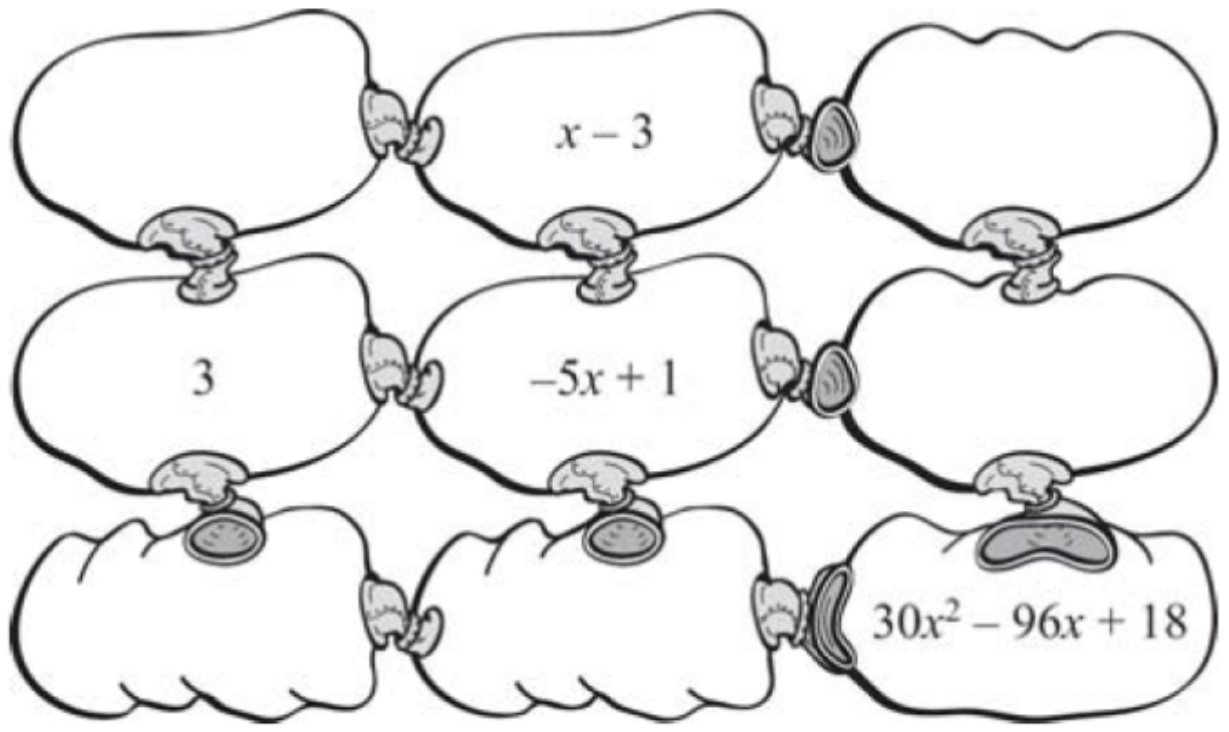
Your task is as follows:

- You will each be given a polynomial puzzler sheet
- You will then work with your partners to arrive at solutions to the puzzles
- We will come back together as a class and discuss the solutions

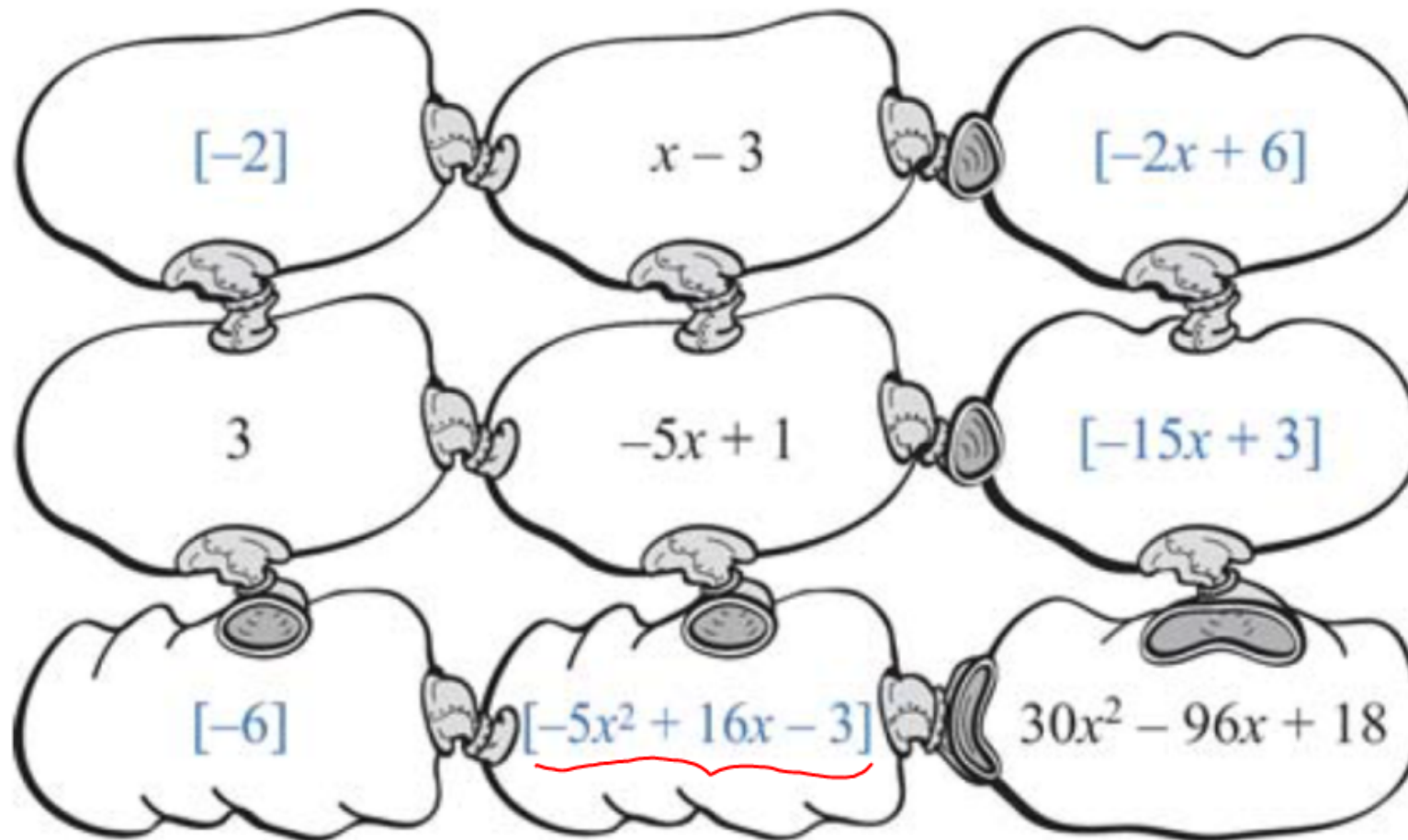


**1.**

2.

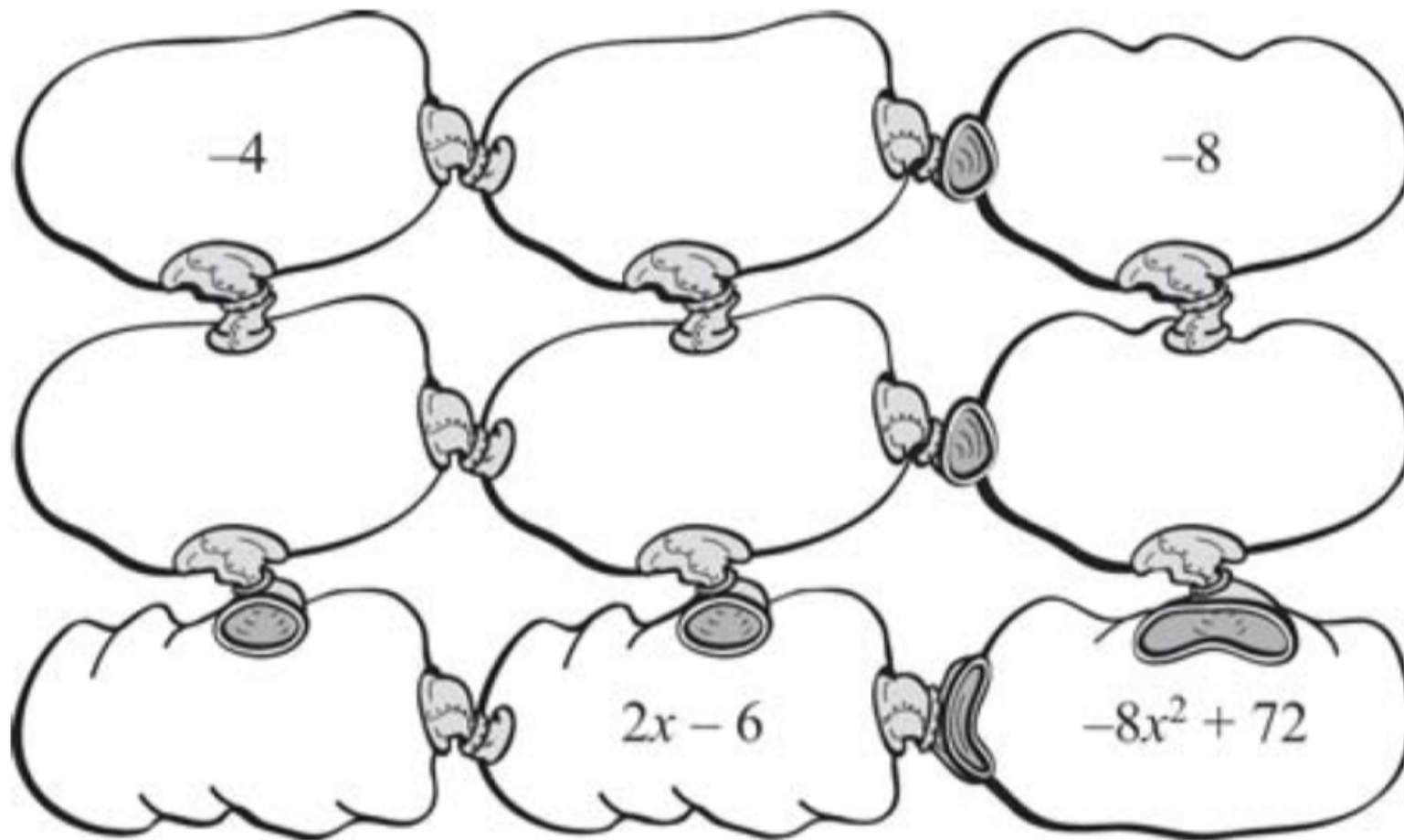


2.

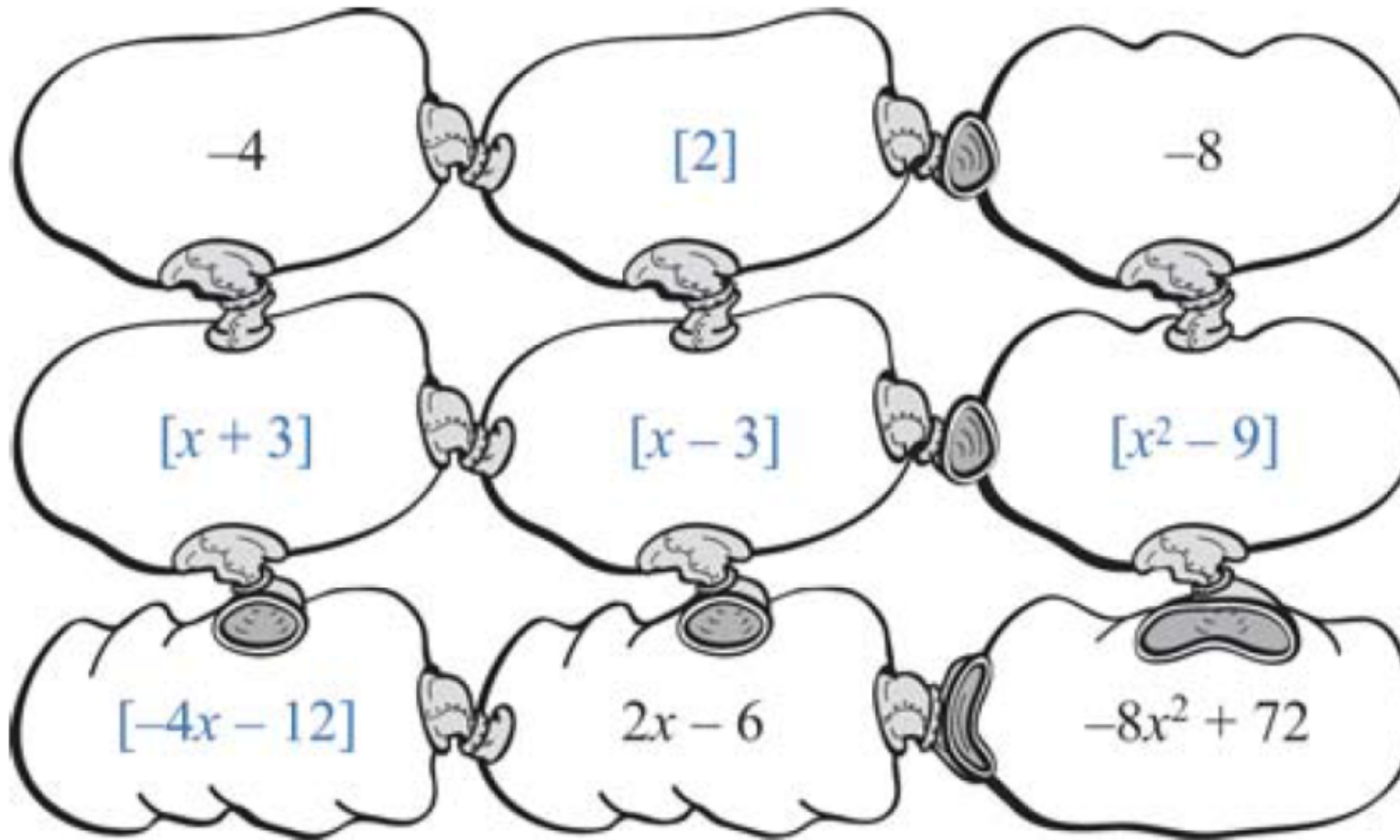




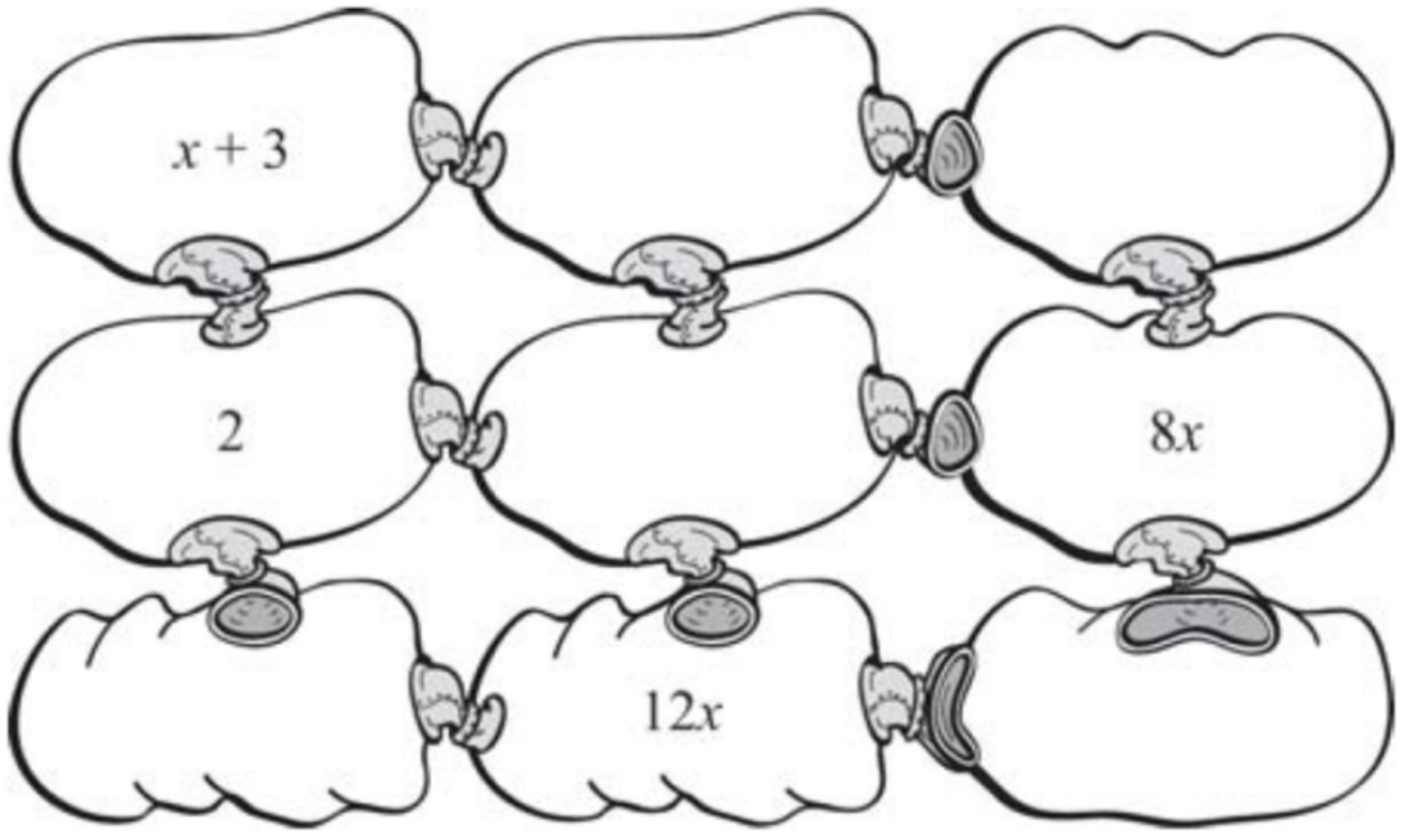
3.



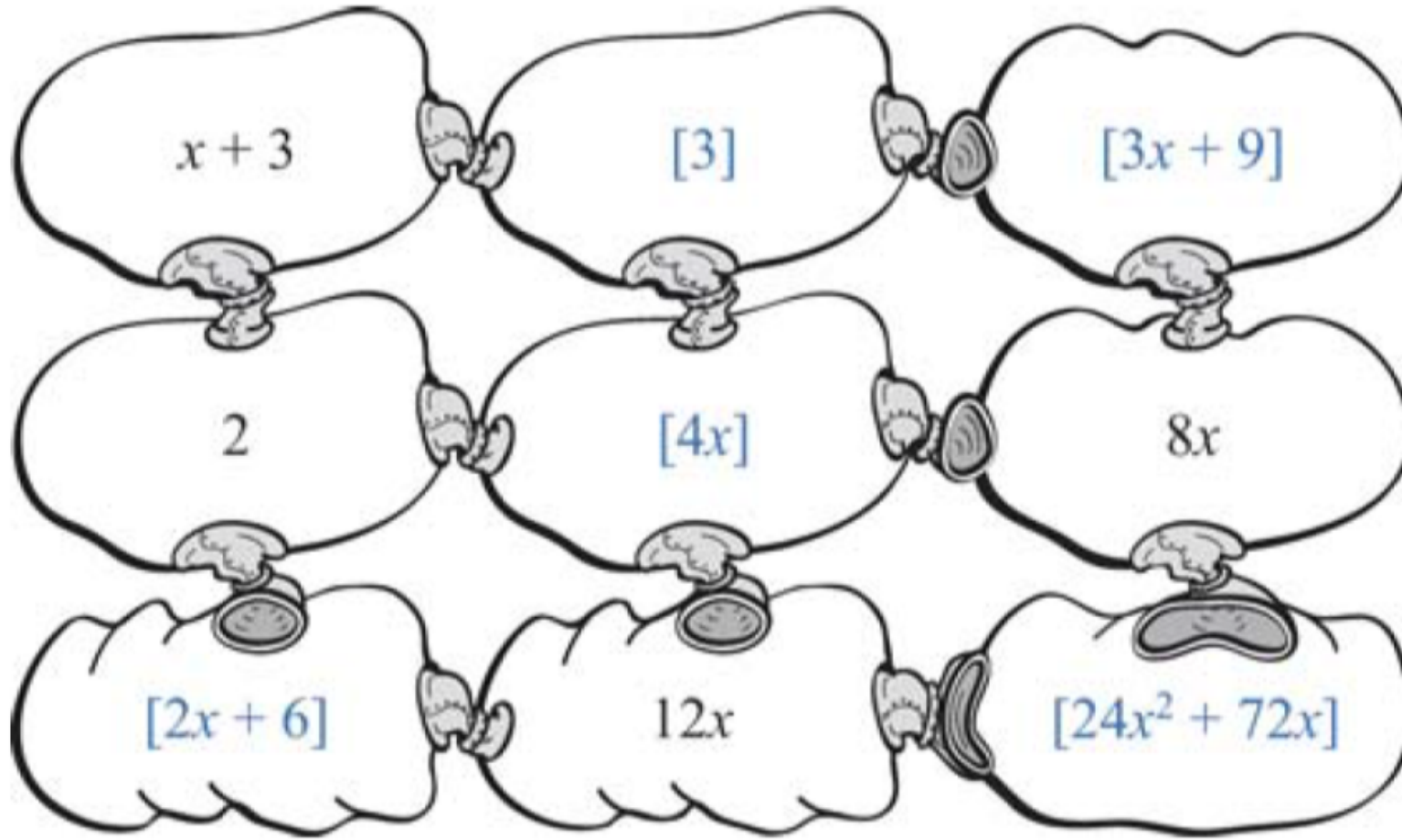
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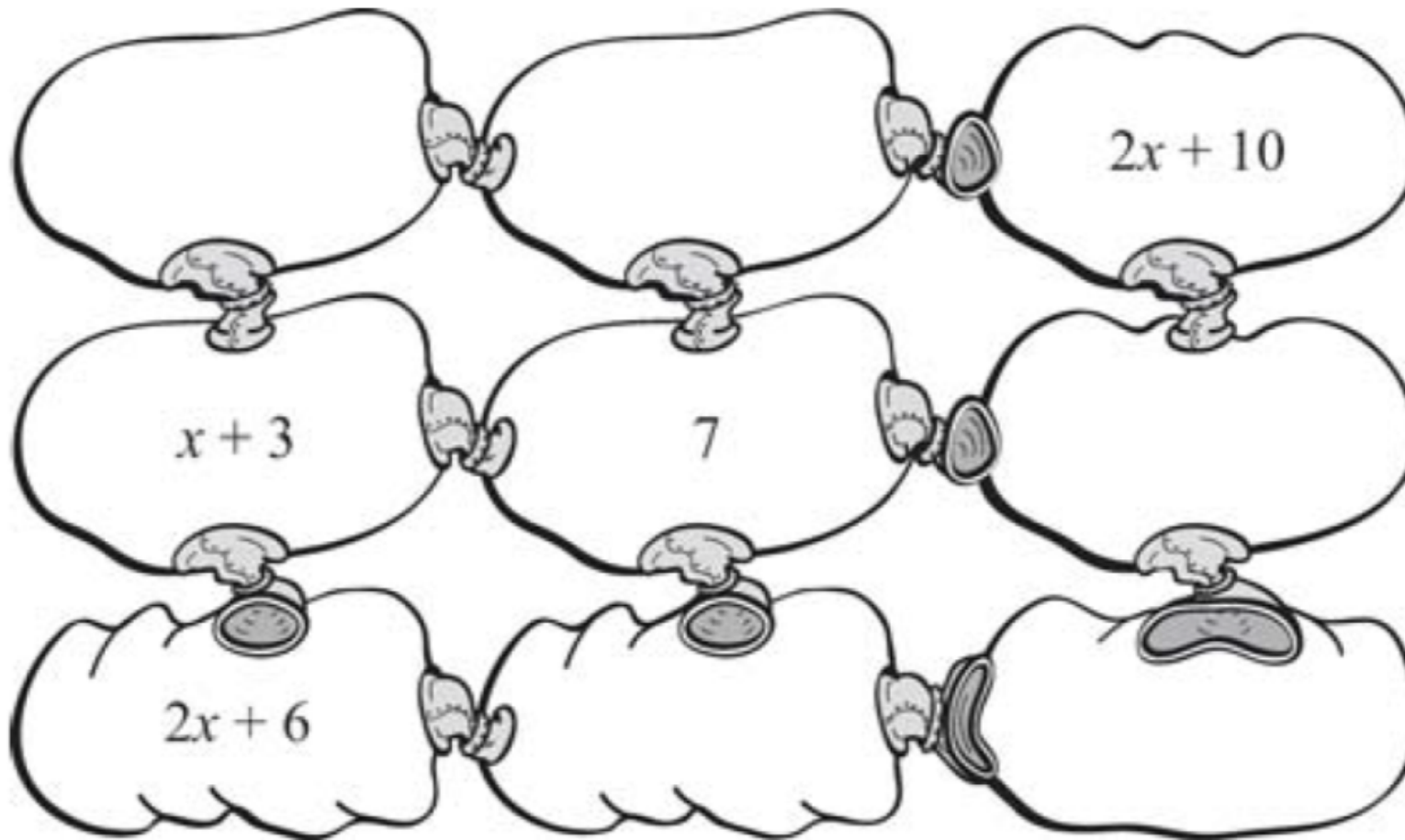
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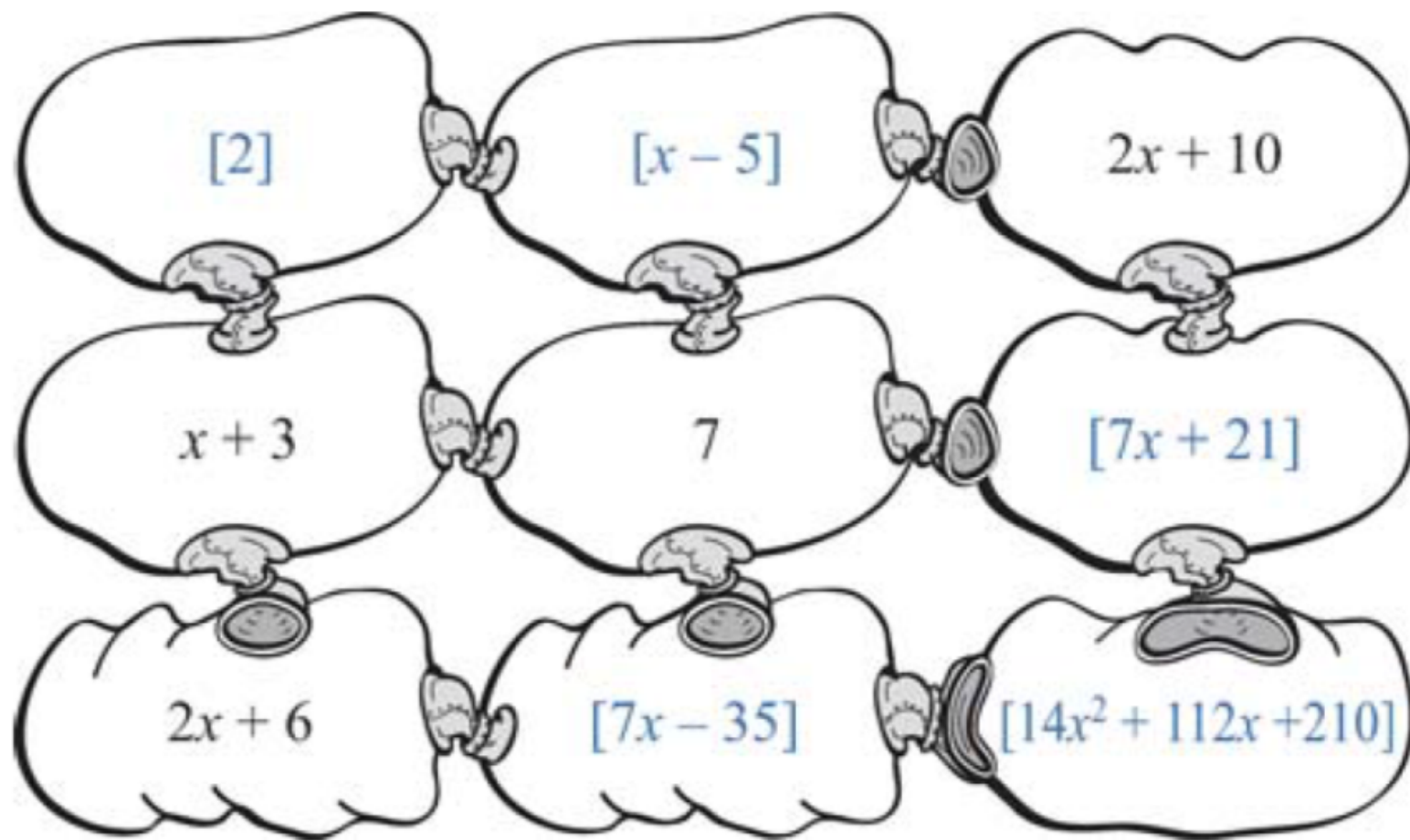
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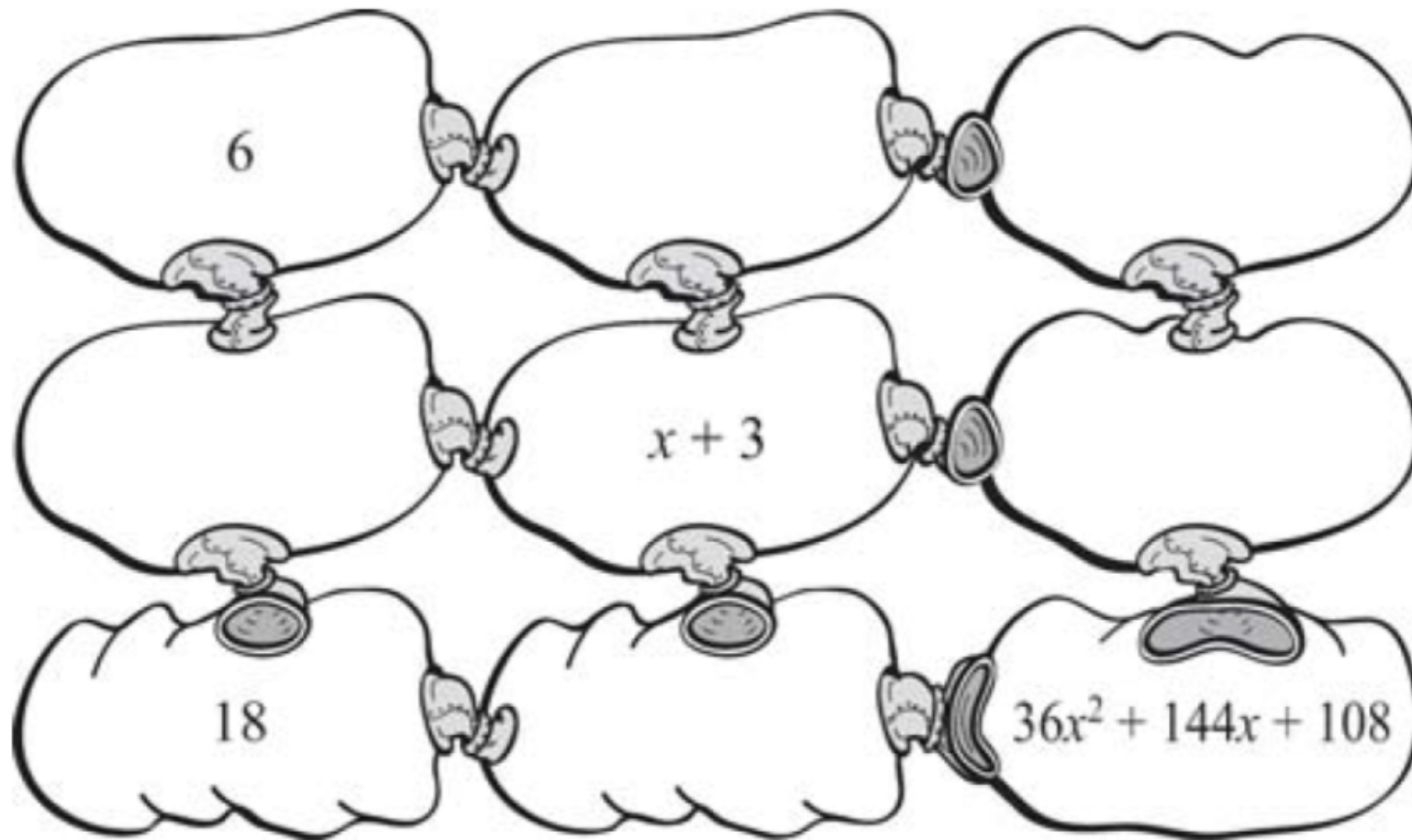
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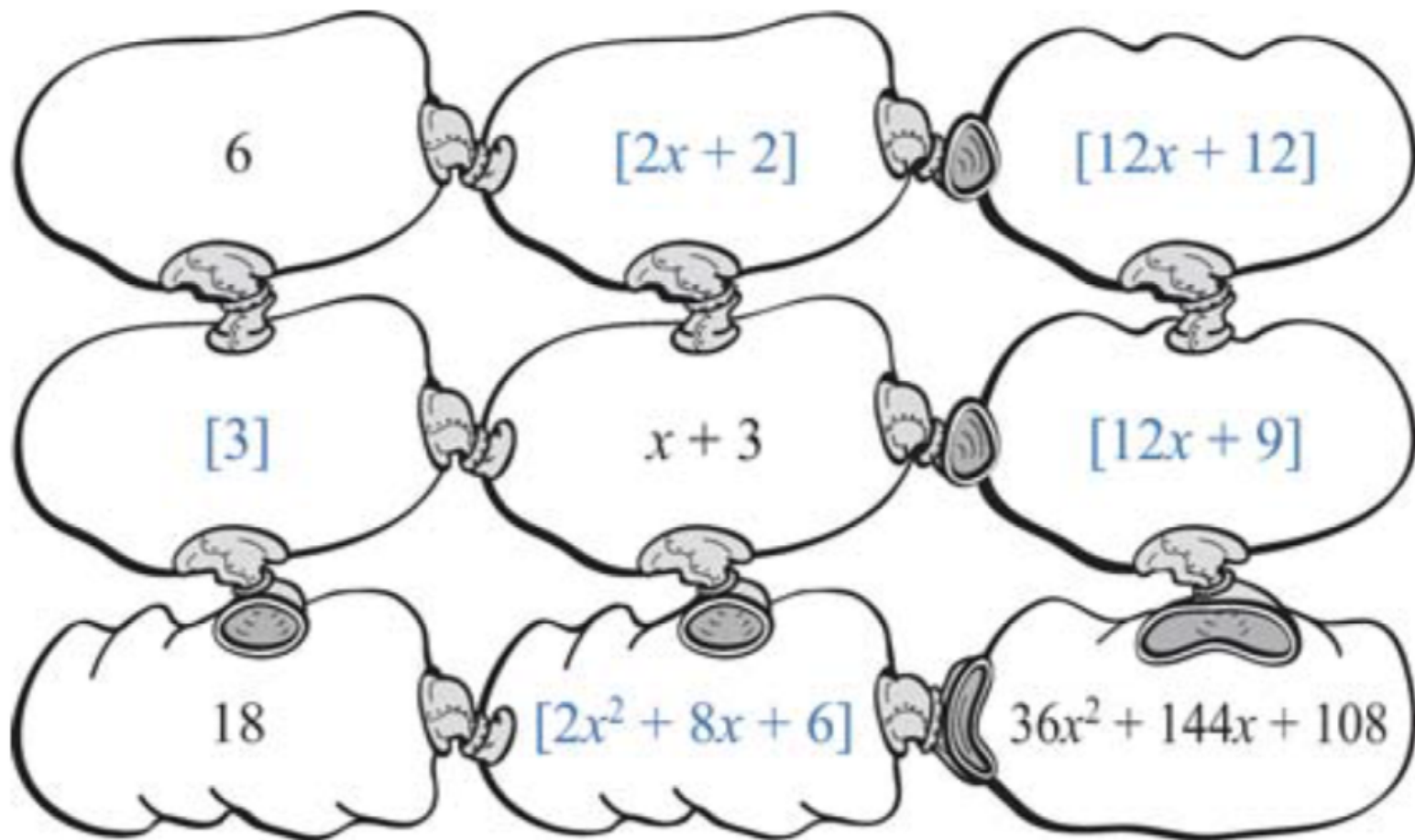
5.



6.



6.





# HW # 5: Polynomial Puzzler

Quiz #2 Tomorrow!!  
Polynomials:  
Classify and perform  
operations on Polynomials