

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) $6(\underline{x-7})$

$$6x - 42$$

2) $8m(\underline{m+2})$

$$8m^2 + 16m$$

3) $3a^2(\underline{3a^2-4a+8})$

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

4) $7v^4(\underline{3v^2-8v+7})$

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

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

	n	-1	
n	$6n^2$	$-6n$	$= 6n^2 - 3n - 3$
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) $(2b - 5)(4b + 1)$

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

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

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

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

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

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

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

Cumulative Practice Plus a Little Extra

E.Q.

How do we multiply polynomials together?

GEORGIA STANDARDS OF EXCELLENCE

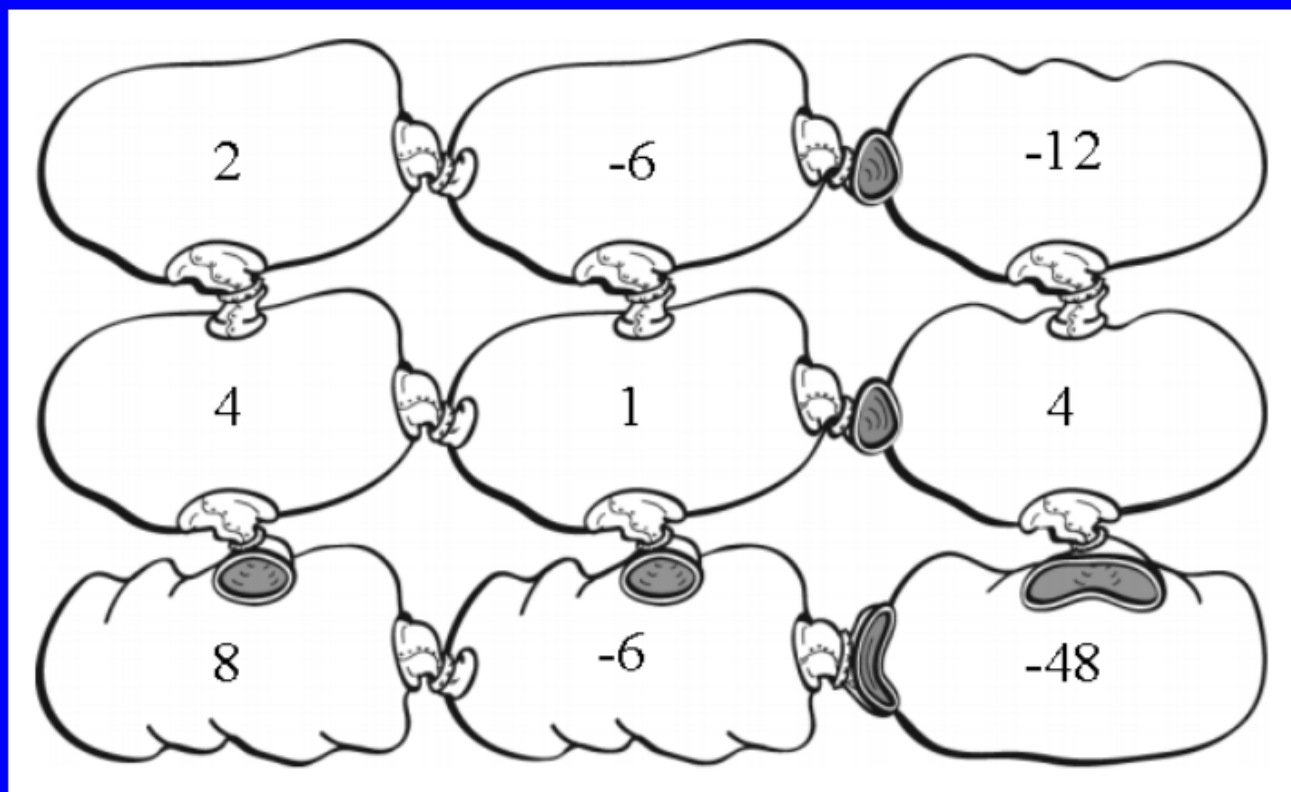
Perform arithmetic operations on polynomials

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

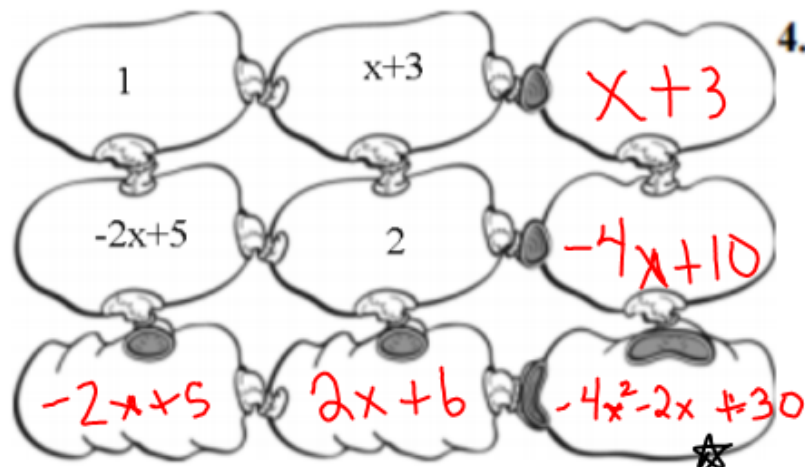
Handwritten annotations: A vertical line is drawn between the first and second columns. A downward arrow is next to the -35. A horizontal arrow points from -14 to -700. The -700 is circled.

2.

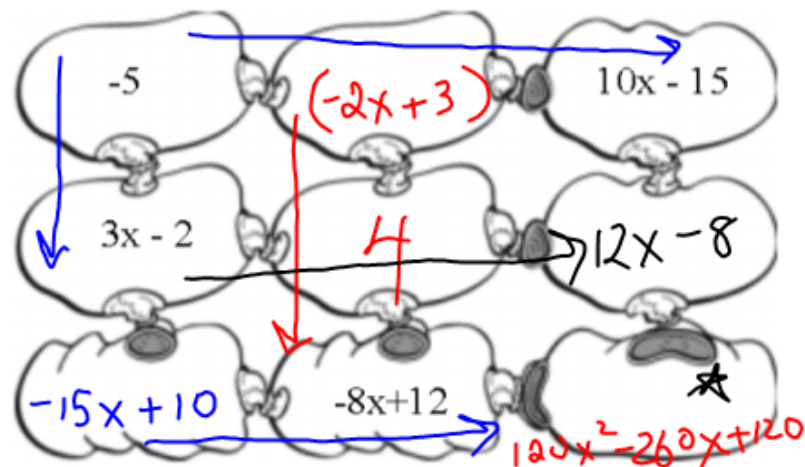
3	-5	-15
-8	-2	16
-24	10	-240

$$-4x^2 + 30$$

3.



4.



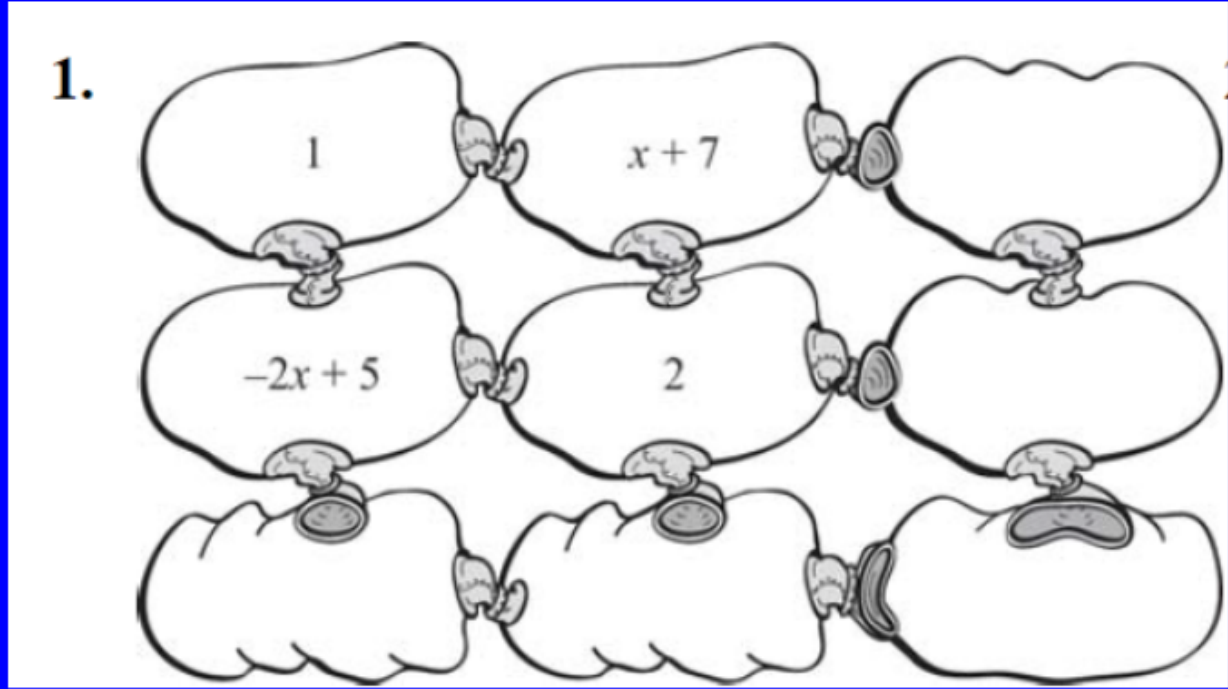
$$(-2x+5)(2x+b)$$

$$\text{or } (x+3)(-4x+10)$$

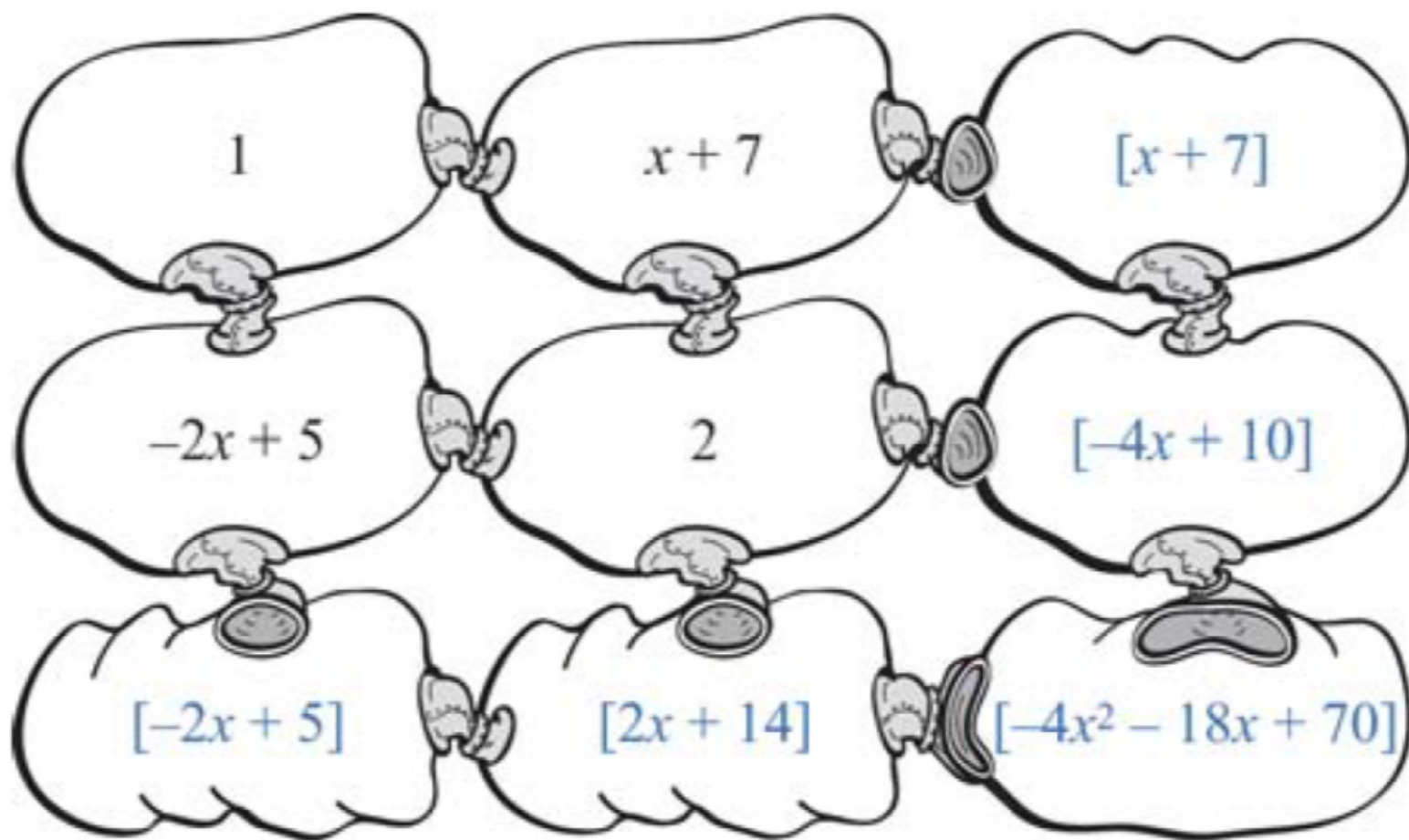
	$-15x$	$+10$
$-8x$	$120x^2$	$-80x$
$+12$	$-180x$	$+120$

Your task is as follows:

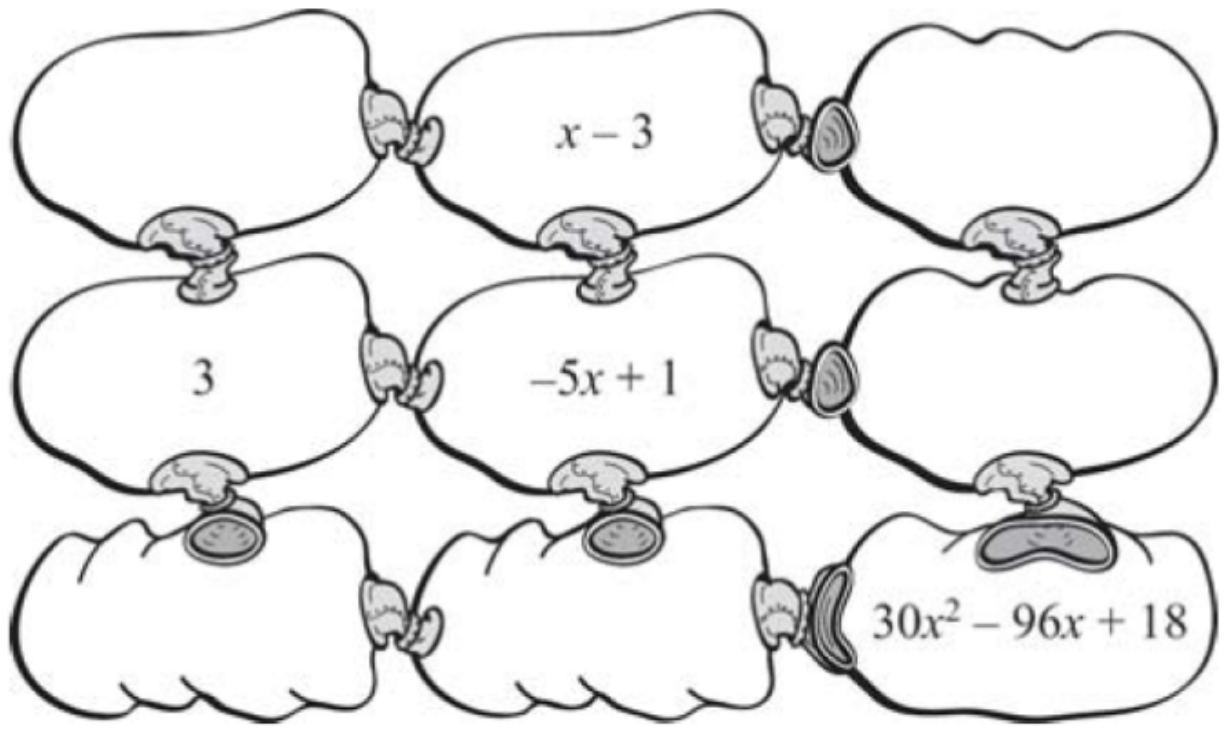
- You will each be given a polynomial puzzler sheet
- You will then work with your partners to arrive at solutions to the puzzles
- We will come back together as a class and discuss the solutions



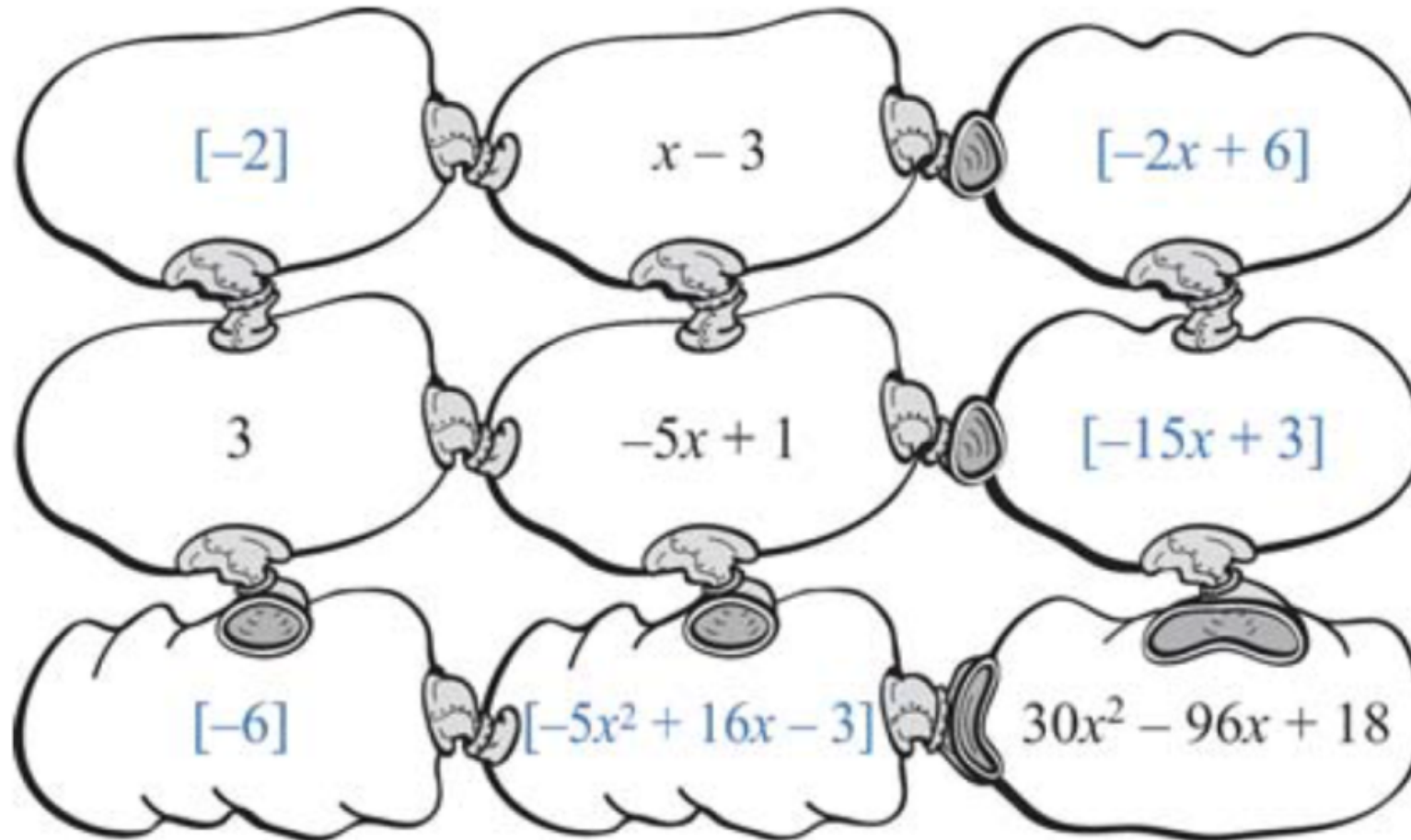
1.



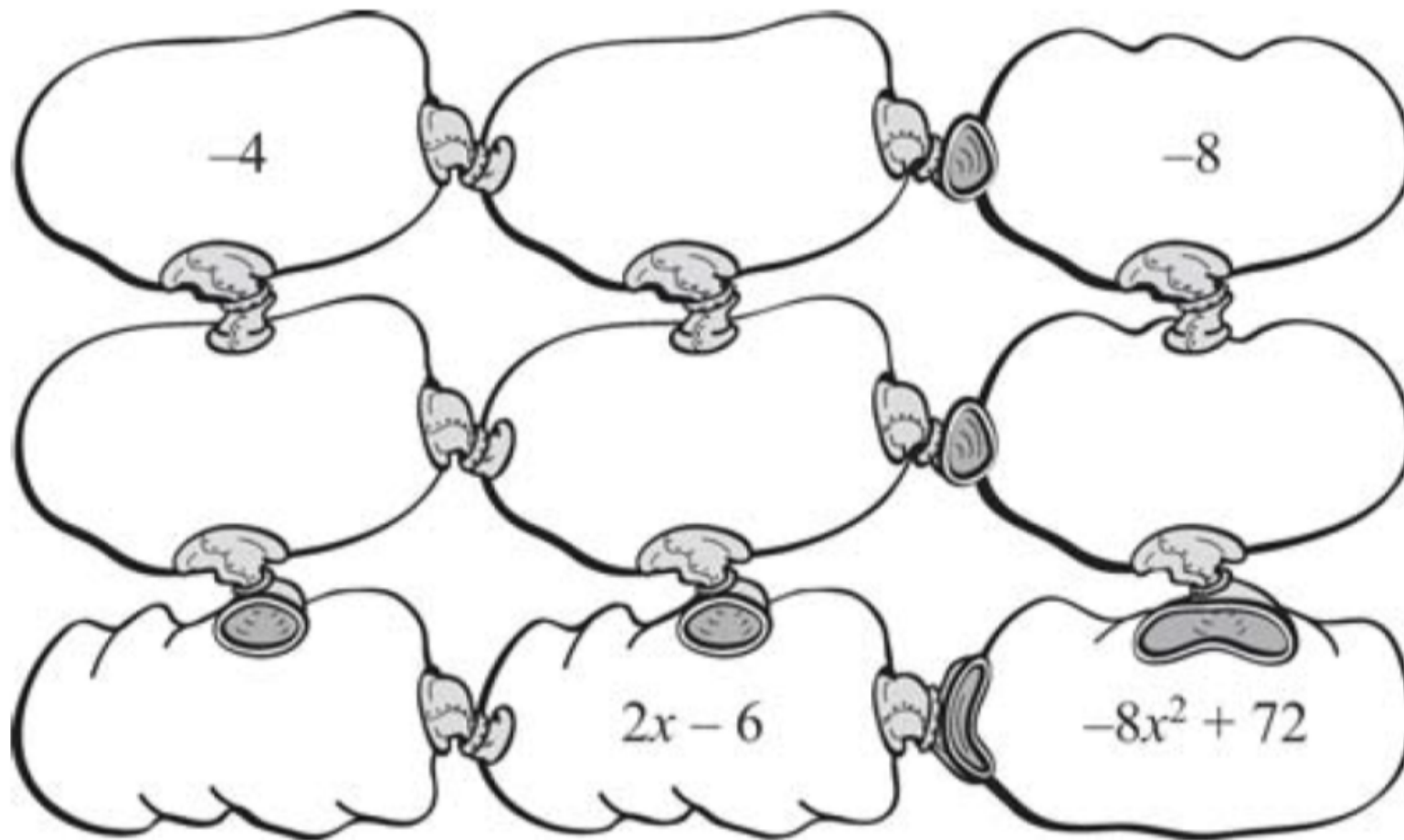
2.



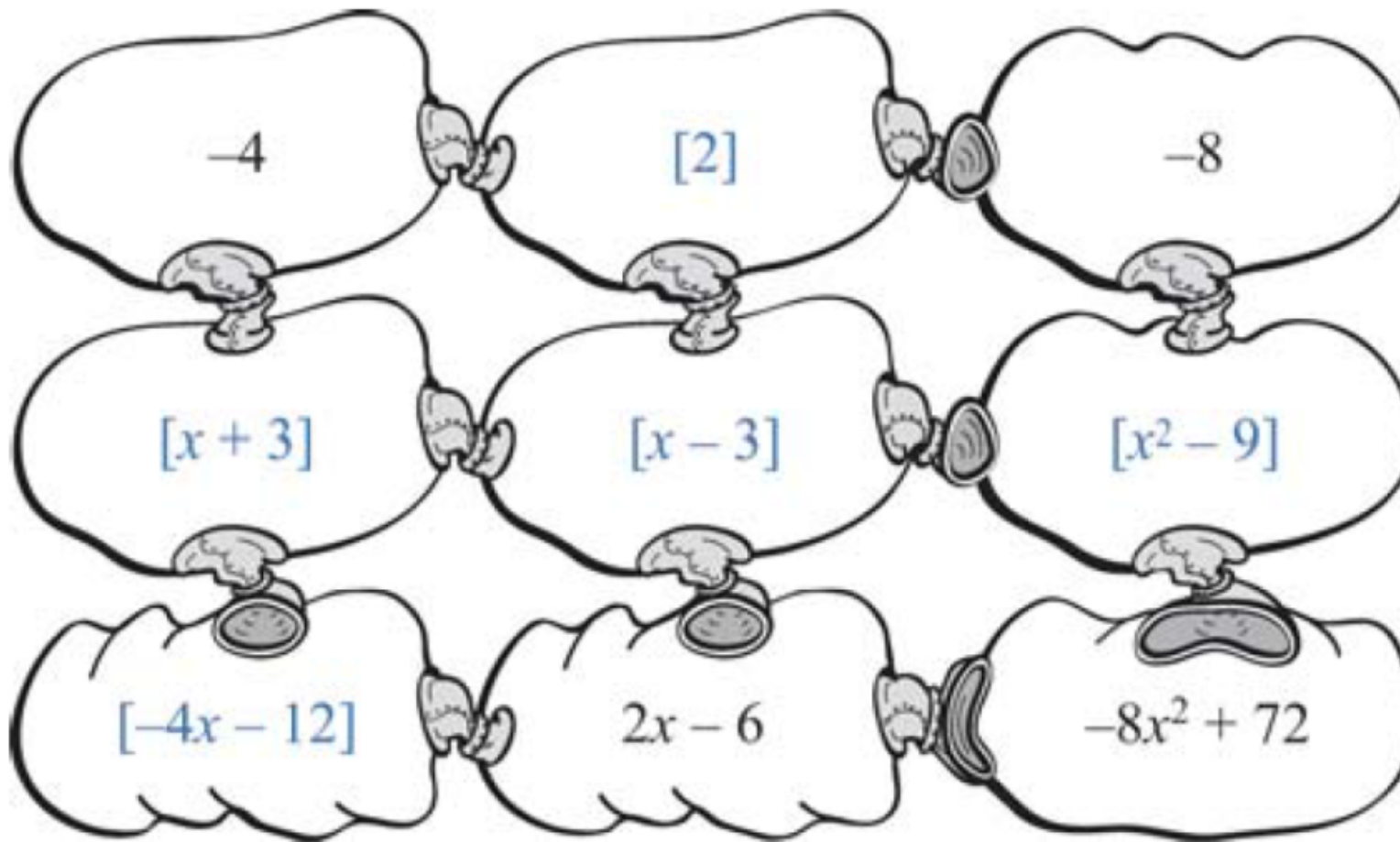
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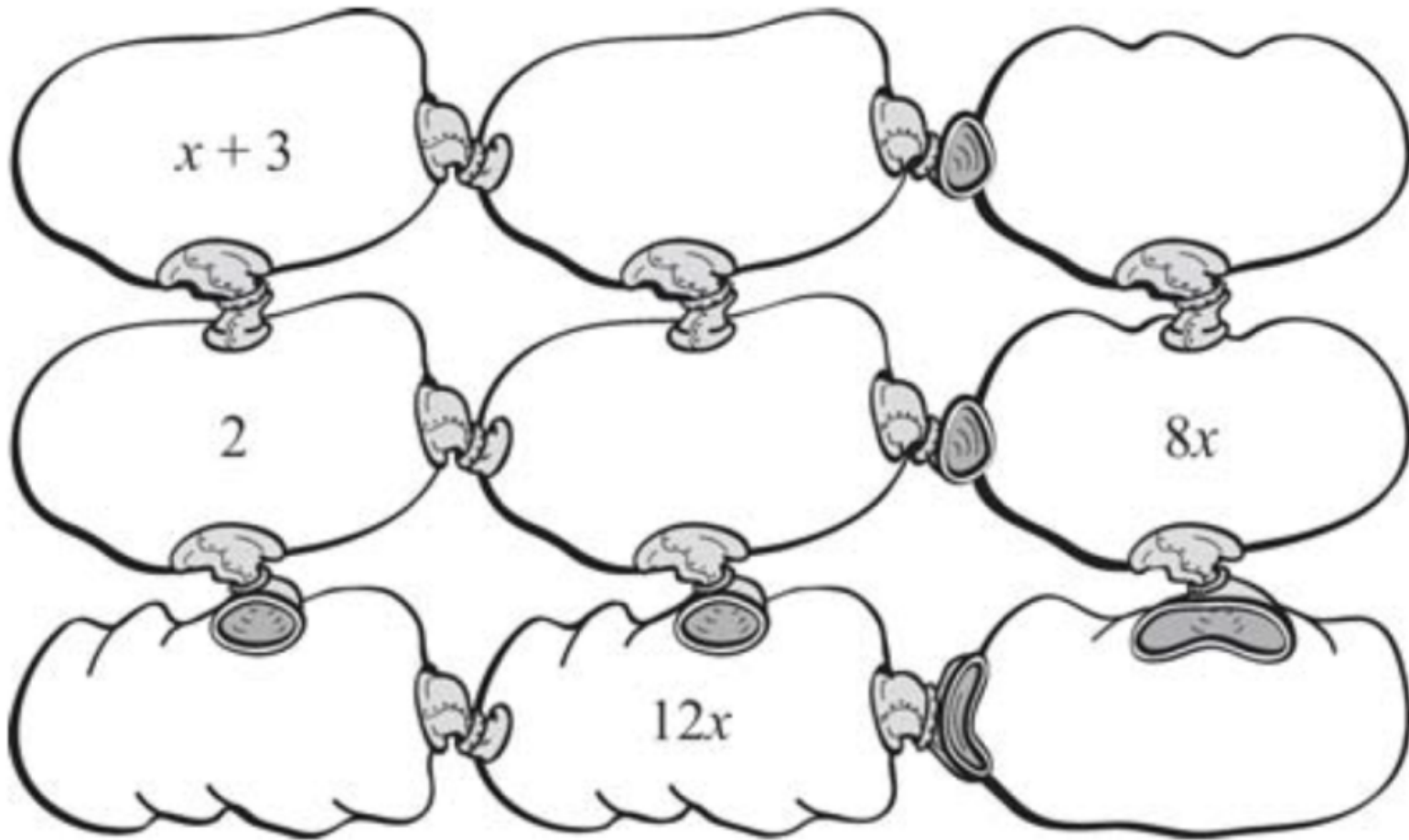
3.



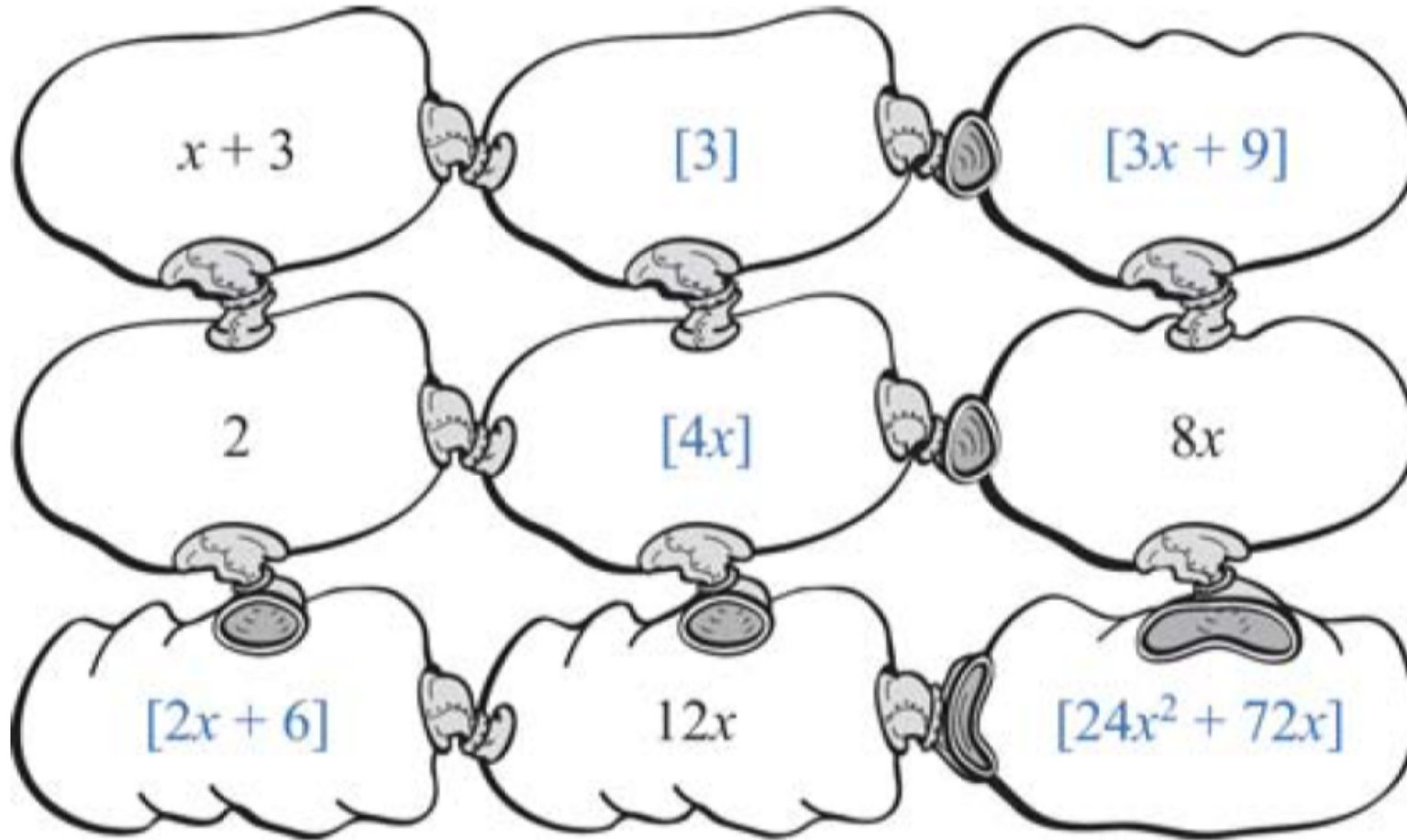
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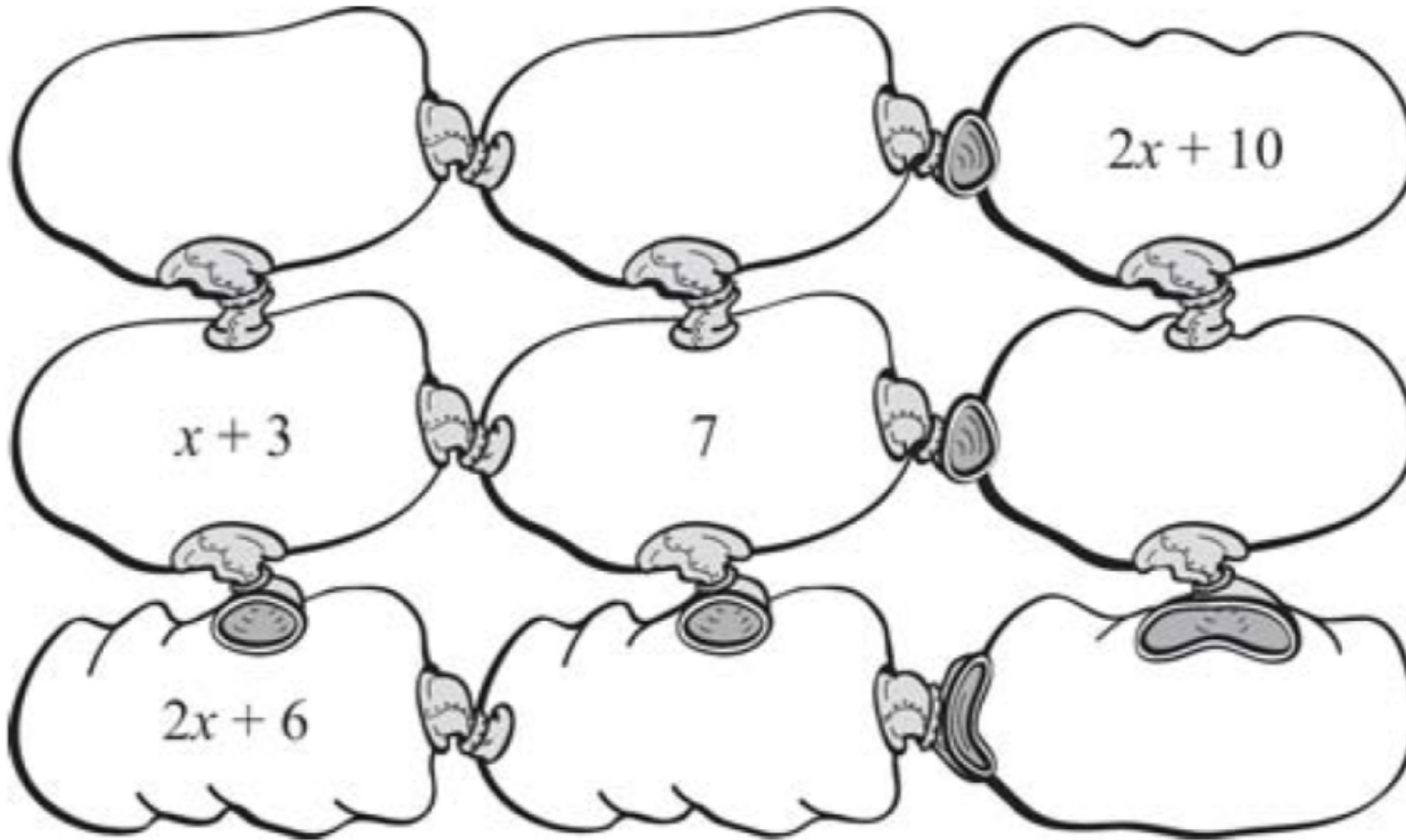
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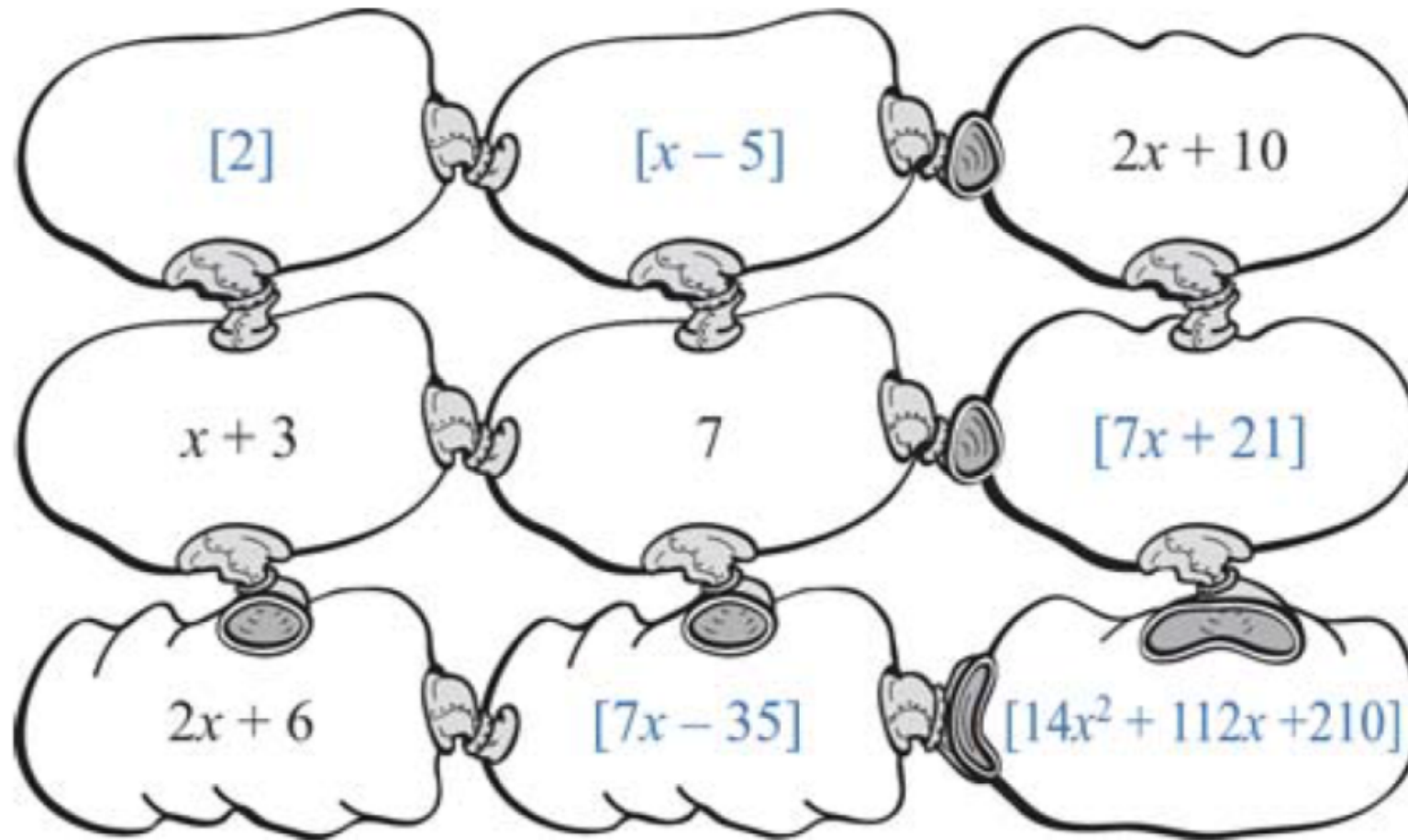
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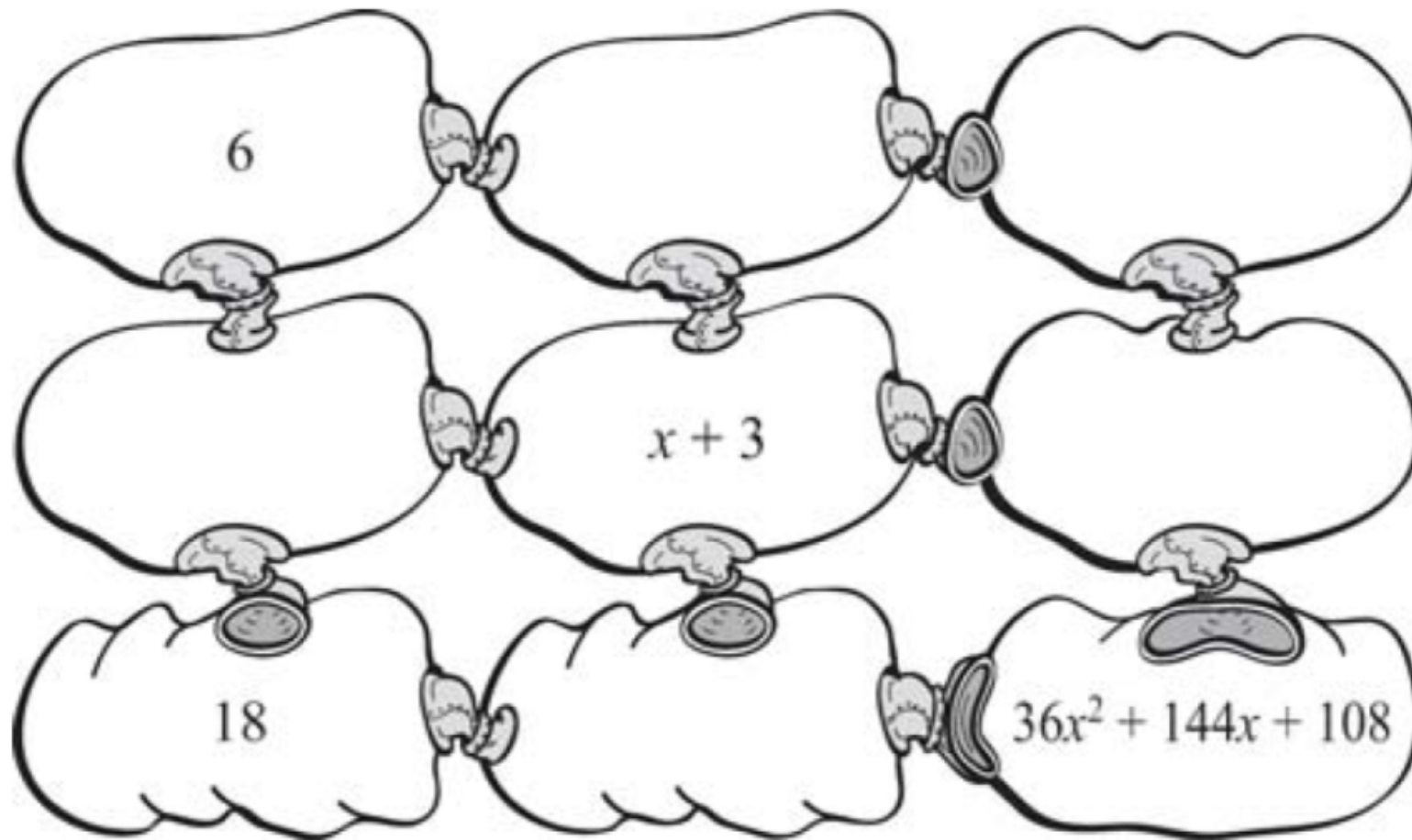
5.



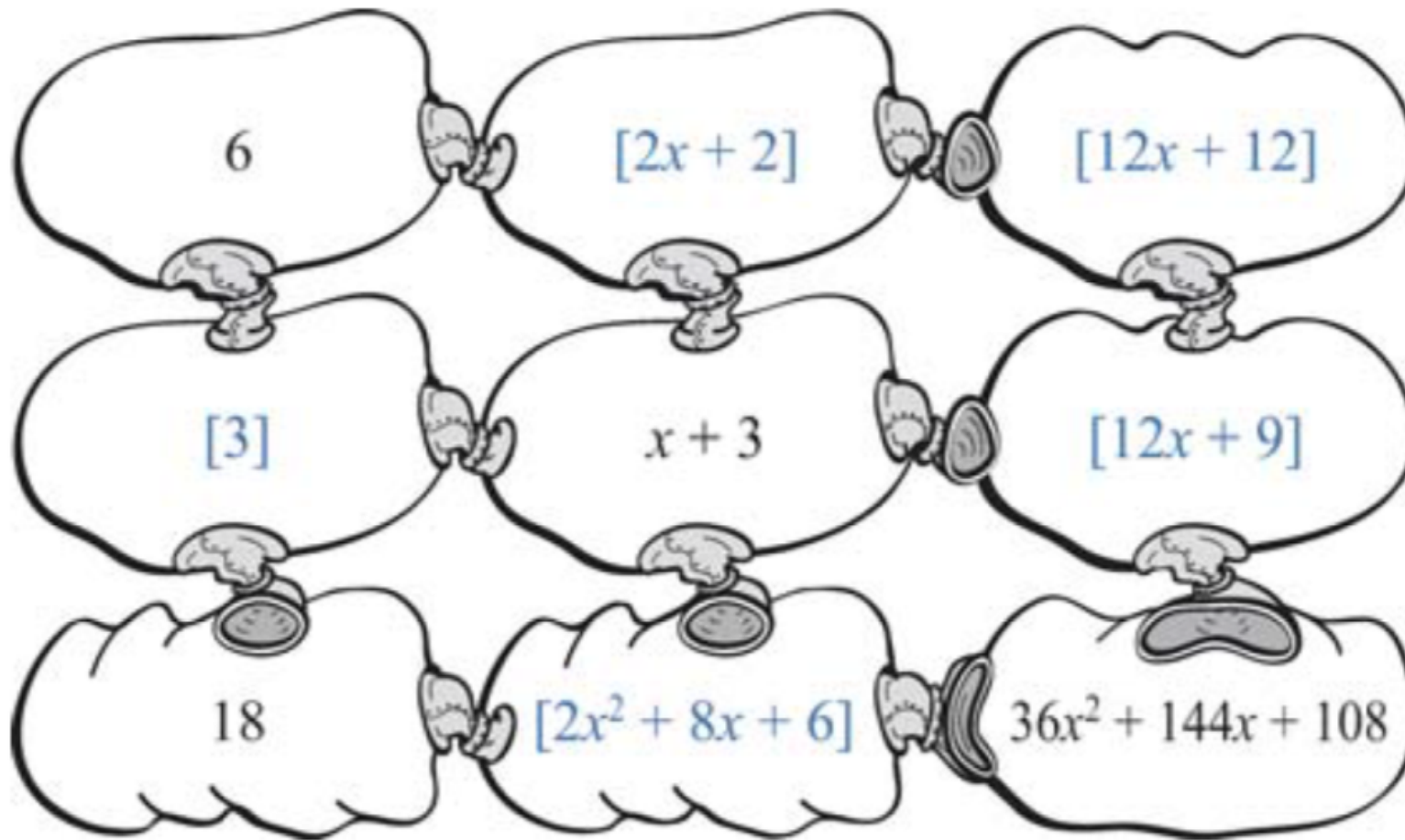
5.



6.



6.



HW # 5: Polynomial Puzzler

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