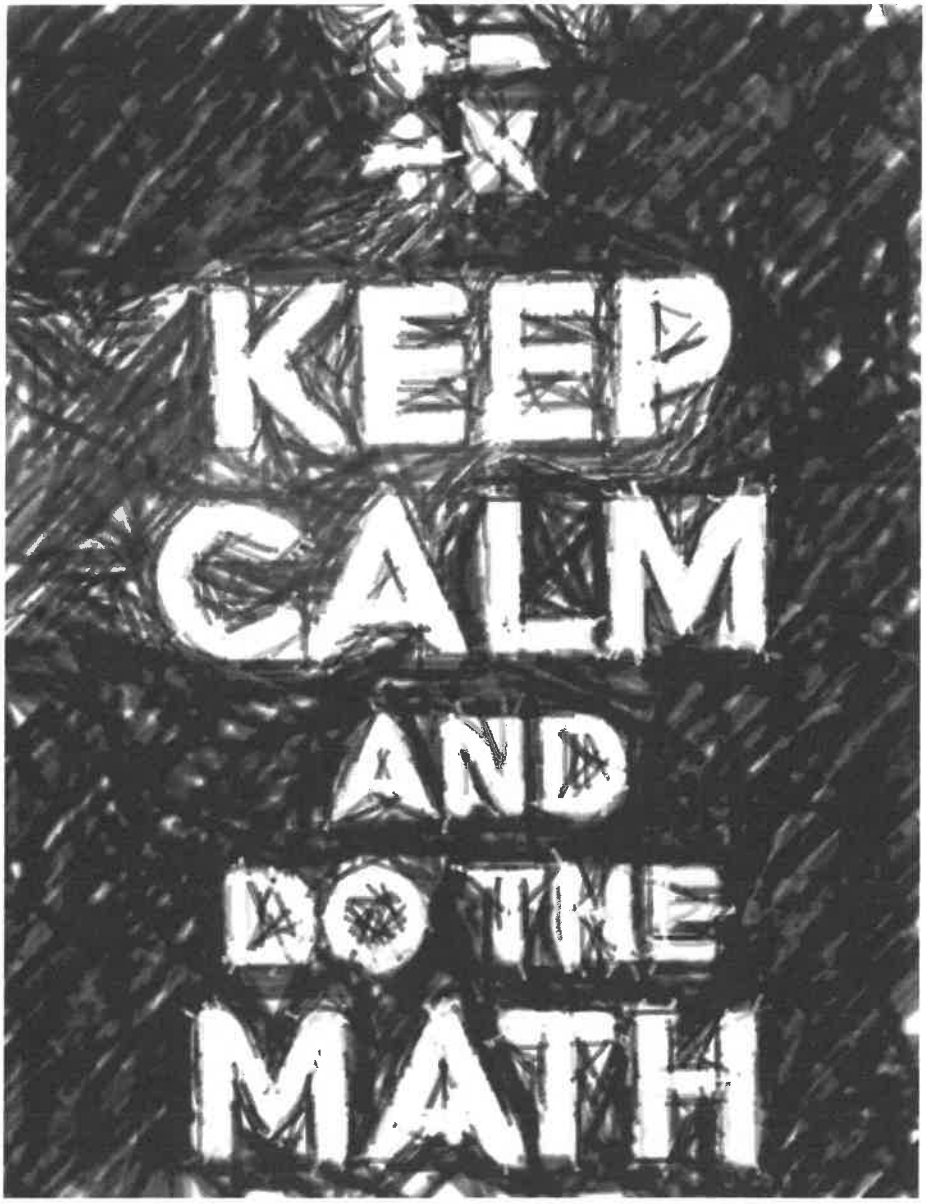
NAME: _____

Math P.A.T. Prep

Polynomials- SOLUTIONS



St. Brendan School

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Polynomials:

Coefficients (with variable): 3, 4

$3x^2 + 4x - 6$ (Degree) → highest exp.

Terms

Constant → No Variable −6

$3x^2 - 4$

19. Which row correctly shows the degree, the coefficient, and the constant term in the expression shown above?

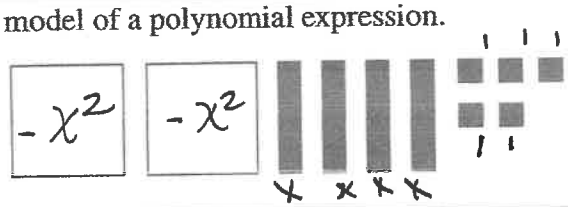
Row	Degree	Coefficient	Constant Term
A.	2	3	−4
B.	3	2	4
C.	2	−4	3
D.	3	4	2

$3x^2 - 4$ → Constant is −4

Degree of 2

Coefficient is 3

The diagram below is a model of a polynomial expression.



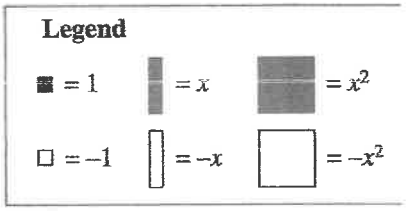
$-2x^2 + 4x + 5$ → Degree of 2

3 Terms

When working with algebra tiles → Always eliminate Zero Pairs First

37. Which of the following rows correctly describes the modelled polynomial expression?

	Number of Terms	Degree
A.	2	2
B.	2	4
C.	3	2
D.	3	4



29. Which of the following pairs of expressions represents like terms?

A. $3x$ and 

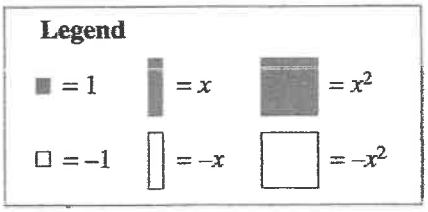
B. $-6x^2$ and 

C. $-2(4x)$ and 

D. $4(-1x)$ and 

−4x → same coefficient, same variable

(same shape algebra tile)



"Like" Terms have to have

- Same variable
- Same exponent
- Same shape of algebra tile

19. Which pair of expressions below are equivalent for all values of x?

means same

EQUIVALENT Polynomials → Same/equal Terms → sign, exponent, coefficient

STRATEGY: ALWAYS WRITE THE TERMS IN DESCENDING ORDER!

A. $-3x + 4x^2 + 2$ and $4x^2 - 2 + 3x$

B. $-3x + 4x^2 + 2$ and $2 - 3x + 4x^2$

C. $2 - 4x^2 + 3x$ and $-4x^2 + 3x - 2$

D. $2 - 4x^2 + 3x$ and $-3x + 4x^2 + 2$

(A) $4x^2 - 3x$ / $4x^2 + 3x - 2$ — not the same

(B) $4x^2 - 3x + 2$ / $4x^2 - 3x + 2$

(D) $-4x^2 + 3x + 2$ and $4x^2 - 3x - 2$ — Different

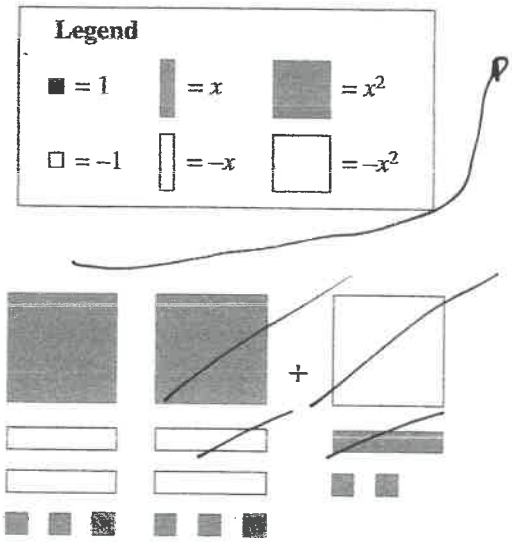
ADDING POLYNOMIALS

(C) $-4x^2 + 3x + 2$ / $4x^2 - 3x - 2$ — Different

can only "Pair" Like Terms!

STRATEGIES:

1. Zero pairs Right away
2. Write the polynomial you have in Tiles in Numbers!



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

$= \underbrace{2x^2 - x^2}_{x^2} \underbrace{-4x + x}_{-3x} + \underbrace{6 + 2}_{+8}$

$= x^2 - 3x + 8$

7. Which of the following expressions represents the solution to the model shown above?

A. $x^2 - 3x + 8$

B. $x^2 + 3x - 8$

C. $-x^2 - 5x + 8$

D. $-x^2 + 5x - 8$

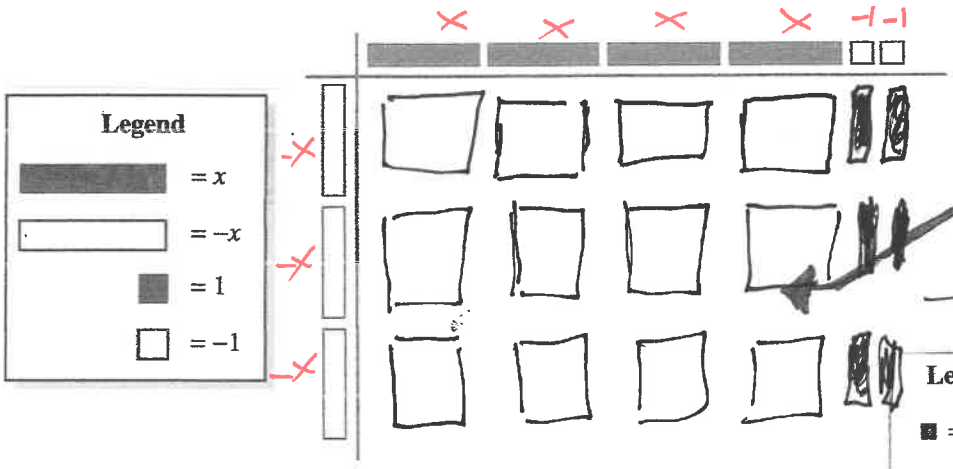
only add equal Terms

Multiplication Polynomials

$x \cdot x = x^2$

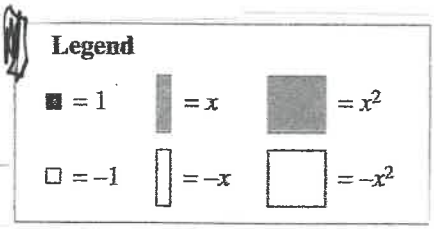
- Think about going up
  $3x^2 \cdot x = 3x^3$
- Numbers • Numbers
  Letters • Letters

The diagram below shows an incomplete model of the multiplication of two polynomials.



This is where the "product" is!

$-12x^2 + 6x$



24. What is the coefficient on the x-term in the product?

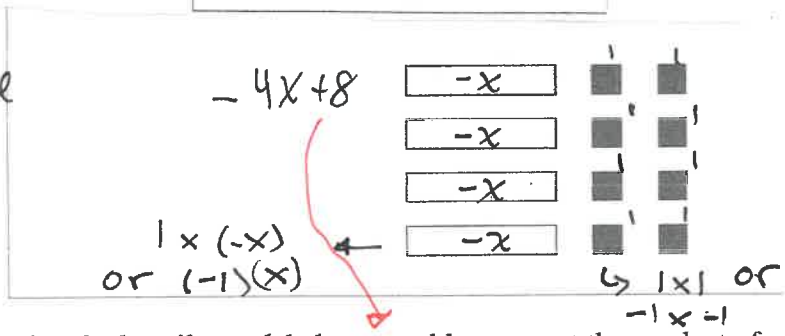
A. −12
B. 12
C. −6
D. 6

another strategy → deal with numerical values instead:

$-3x(4x-2)$

$-12x^2 + 6x$

the coefficient of the x term is 6



$-4x+8$

$1 \times (-x)$ or $(-1)(x)$

↳ 1×1 or -1×-1

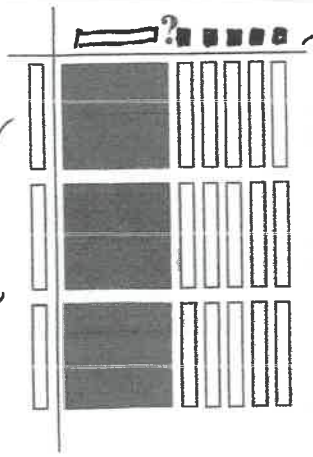
9. The algebra tile model above could represent the product of

multiplication

A. 2 and $(2x + 4)$ $= 4x + 8$ wrong
B. 2 and $(2x - 4)$ $= 4x - 8$ wrong
C. 4 and $(-x - 2)$ $= -4x - 8$ wrong
D. 4 and $(-x + 2)$ $= -4x + 8$ ✓

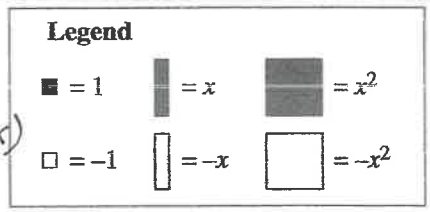
39. Which of the following polynomials represents the unknown expression in the model shown [redacted]?

A. $x^2 - 5x$
B. $-x^2 + 5x$
C. $x - 5$
D. $-x + 5$



$(-x)(-x) = x^2$

$1 \times (-x)$
↓
$-x$



this is division!

Answer:
$-x + 5$