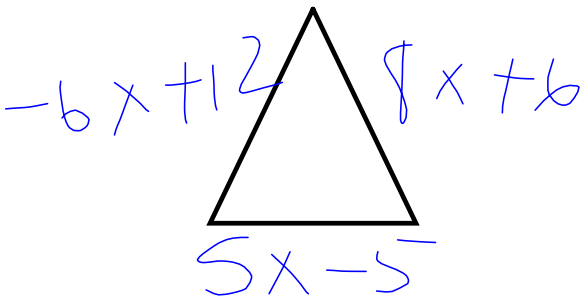
Example

A door has a window with a shape of a triangle with sides lengths 8x + 6, 5x – 5, and -6x + 12. What is the perimeter of the triangle?




Per: • 7x + 13

$(16x + 8x^2y - 7xy^2 + 9y - 2xy) - (-9xy + 8xy^2 + 10x^2y + x - 7y)$

$= (16x + 8x^2y - 7xy^2 + 9y - 2xy) + (9xy - 8xy^2 - 10x^2y - x + 7y)$

$= (16x - x) + (8x^2y - 7xy^2 - 8xy^2 - 10x^2y) + (9y + 7y) + (-2xy + 9xy)$

$= 15x - 17x^2y + 16y + 7xy$

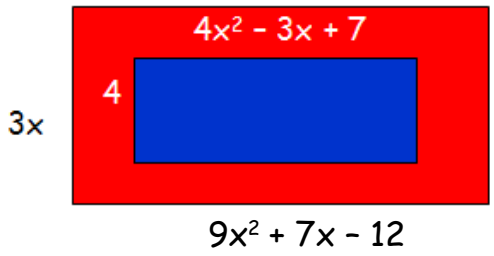
$15x - 2x^2y - 15xy^2 + 16y + 7xy$

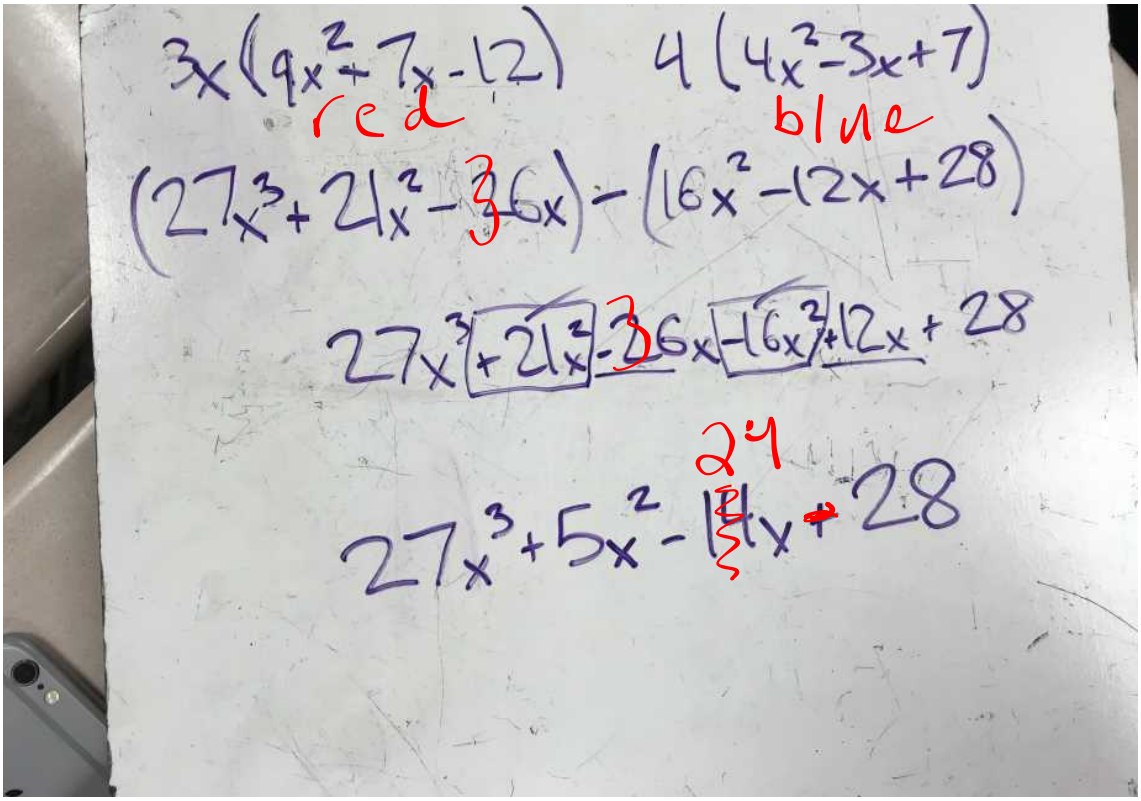
error — not all like terms

Example

$A = lw$

Express the area of the red region as a simplified polynomial.



# Think Pair Share

There is an error in the student work shown below:
Question: Multiply $(3x^2 + x - 8)(x - 1)$.
Solution:

$$(3x^2 + x - 8)(x - 1) =$$
$$= 3x^3 + x^2 - 8x - 3x^2 - x + 8$$
$$= 3x^3 - 4x^2 - 9x + 8$$

$3x^3 - 2x^2 - 9x + 8$ :)

What is the error? Explain how to solve the problem.

## Example

Simplify the following binomial

$$(6 - x)^4$$

$1296 - 864x + 216x^2 - 24x^3 + x^4$

- Calculator
- Create your own 3x4 notecard

How is this expanded form different if we have $(x - 6)^4$? Explain

## Example

Simplify the following binomial

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

## Example

Find the coefficient of third **term** in the binomial expansion.

$$(x + 2y)^7$$

How does the answer change is the binomial is a difference, $(x-2y)^8$?

## Example

Simplify the following binomial

$$(2x^2 - x) - (3x^3 + 4x - 1) - (x^3 + 9x^2 - 11)$$

$$(2x^2 - x) + (3x^3 + 4x - 1) + (x^3 + 9x^2 - 11)$$

## Example

Simplify the following binomial

$$(2x^2 - x) + (3x^3 + 4x - 1) + (x^3 + 9x^2 - 11)$$

## Example

Find and simplify the third **term** in the binomial expansion.

$(x^3 - 2y)^7$

How many terms will the answer have?

## Example

Find the coefficient of term with $b^8$ in the binomial expansion.

$(5a^4 + b)^9$

How many terms will the answer have?