



# Polynomial Expressions and Perimeter

Video Notes

[Video Link](#)

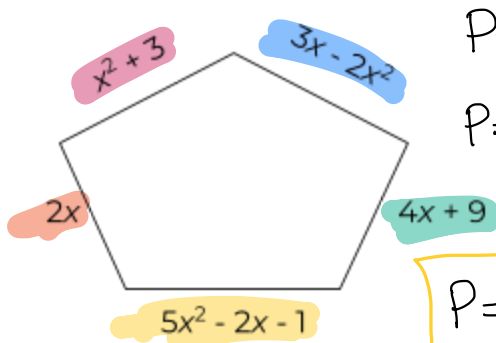
# Polynomial Expressions and Perimeter

Background Knowledge:

- Expanding and Simplifying Algebraic Expressions

Perimeter  $\rightarrow$  the distance around a figure

Determine the perimeter of the figure below.



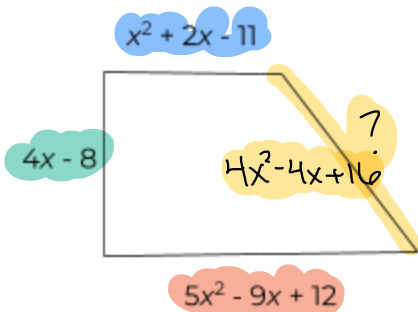
$$P = (x^2 + 3) + (3x - 2x^2) + (4x + 9) + (5x^2 - 2x - 1) + (2x)$$

$$P = x^2 + 3 + 3x - 2x^2 + 4x + 9 + 5x^2 - 2x - 1 + 2x$$

$\times$  collect/combine like terms

$$P = 4x^2 + 7x + 11$$

If the perimeter of the entire figure below is  $10x^2 - 7x + 9$ , find the missing side.



missing side =  $P - (\text{Known sides})$

$$? = (10x^2 - 7x + 9) - (x^2 + 2x - 11 + 4x - 8 + 5x^2 - 9x + 12)$$

$$? = (10x^2 - 7x + 9) - (6x^2 - 3x - 7)$$

distribute the negative

$$? = 10x^2 - 7x + 9 - 6x^2 + 3x + 7$$

combine/collect like terms

$$? = 4x^2 - 4x + 16$$