

## Section 5.3 - Adding Polynomials

↳ To add or subtract polynomials, you just need to combine like terms.

Example 1:

Find the sum using algebra tiles and symbolically.

$$(3x^2 + 2x + 4) + (-x^2 + 3x - 5)$$

Combine like terms and use zero property.

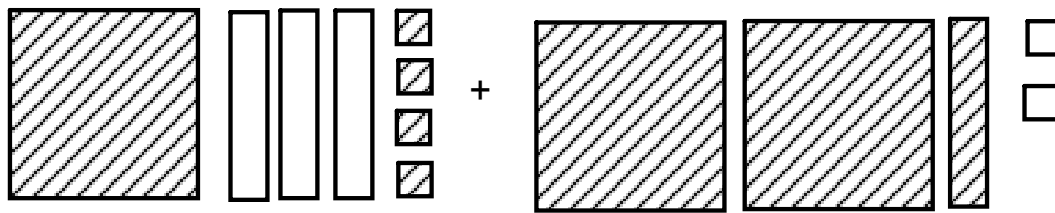
**Algebra Tiles**

**Symbolically**

Example 2: Add symbolically (using algebra)

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

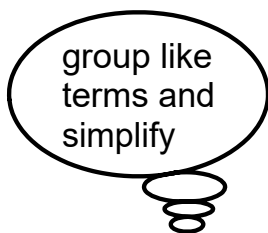
**Example 3:** Add using algebra tiles. Write your answer using tiles and symbolically.



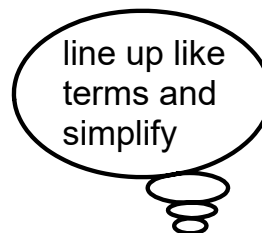
Polynomials can be added horizontally or vertically.

**Example 4:** Simplify  $(7n+14)+(-6n^2+n-6)$

**Horizontally**



**Vertically**



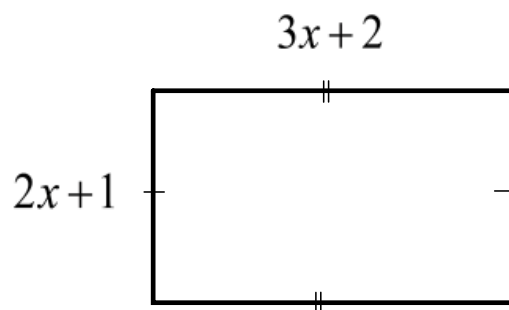
**Example 5:** Add the following both horizontally and vertically.

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

**Horizontally**

**Vertically**

**Example 6:** Write a polynomial for the perimeter of this rectangle.



Remember each side of the rectangle is there twice

**Example 7:** Adding polynomials in two variables

$$(2a^2 + a - 3b - 7ab + 3b^2) + (-4b^2 + 3ab + 6b - 5a + 5a^2)$$

**Example 8:** A student added  $(4x^2 - 8x + 1) + (2x^2 - 6x - 2)$  as follows:

$$\begin{aligned}(4x^2 - 8x + 1) + (2x^2 - 6x - 2) \\ &= 4x^2 - 8x + 1 + 2x^2 - 6x - 2 \\ &= 4x^2 + 2x^2 - 8x - 6x + 1 - 2 \\ &= 6x^2 - 2x - 1\end{aligned}$$

- (i) Is the student's work correct?
- (ii) If not, explain where the student made any errors and write the correct answer.

**Work Book Questions**

p.228 - 229 #3c, 5ab, 6abc, 8aceg,  
9aceg, 10a(i)(ii)(iii), 10b(i)(ii)(iii) - use 1  
to check, 12, 14, 16a, 17ab

**Extra Practice Questions**

p.228 - 229 #3ab, 5cd, 8bdfh,  
9bdfh, 10a(iv), 10b(iv), 17cd