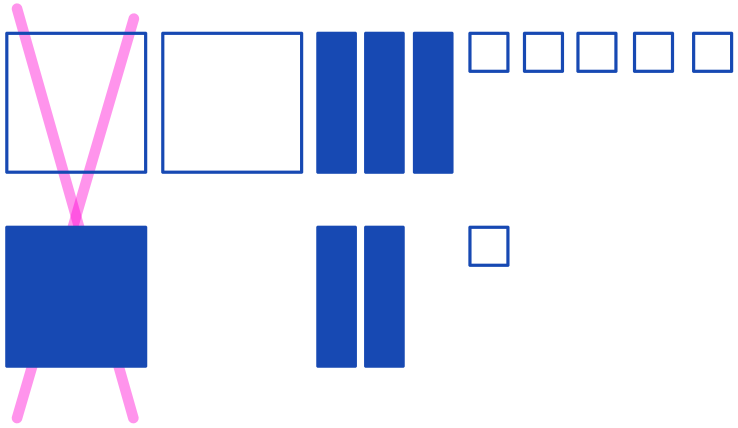
Name: _____ Date: _____

Learning Goal 5.2	I can add and subtract polynomials.

$2x^2 - 3x + 5$

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



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

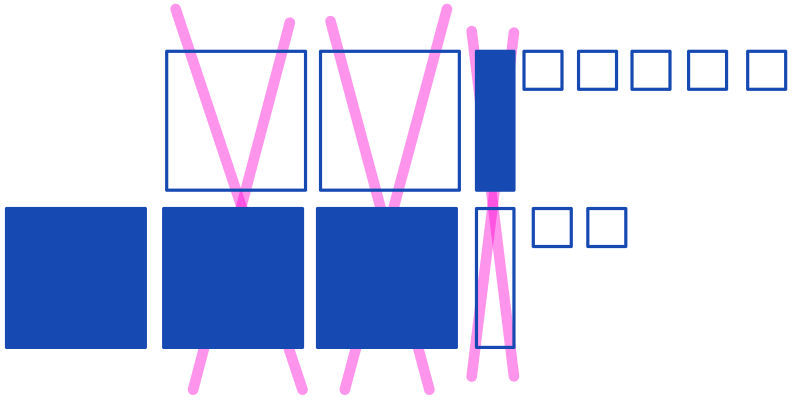
$= 2x^2 - x^2 - 3x - 2x + 5 + 1$

$= x^2 - 5x + 6$

$x^2 \quad -5x \quad +6$

$2x^2 - x + 5$

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

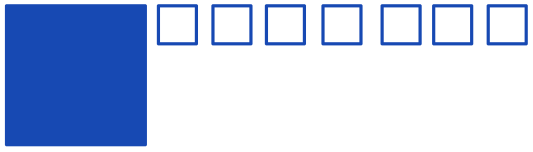


$= 2x^2 + (-3x^2) - x + (+x) + 5 + (+2)$

$= 2x^2 - 3x^2 - x + x + 5 + 2$

$= -x^2 + 0x + 7$

$= -x^2 + 7$



$-x^2 + 7$

Assignment p. 228 # 1 – 9, 13 – 17
p. 234 # 1 – 8, 13, 15, 17

Quiz Next Day!

Your Turn! Add the following polynomials. Use algebra tiles if you like!

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

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

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

$= -3x^2 + 4x - 6$

2. $(1 + 2x^2 + 5x) + (x^2 + 5x)$

$= 2x^2 + (+x^2) + 5x + (+5x) + 1$

$= 2x^2 + x^2 + 5x + 5x + 1$

$= 3x^2 + 10x + 1$

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

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

$= (9x^2 + 4x) + (6x + 3)$

$= 9x^2 + 4x + (+6x) + (+3)$ $= 9x^2 + 4x + 6x + 3$

$= 9x^2 + 10x + 3$

4. $(9 - 4x + x^2 + 3x - 8) + (-5x + 7 - 3x^2 + 7x^2 - 4 + 3x)$

$= (x^2 - 4x + 3x + 9 - 8) + (-3x^2 + 7x^2 - 5x + 3x + 7 - 4)$

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

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

$= 5x^2 - 3x + 4$

5. $(3x^2 - y^2 + 3z^2 + 4y^2 - 5x^2 + z^2) + (4xy - y^2 - 3x^2 + 2xy - z^2 - 3y^2)$

$= (3x^2 - 5x^2 - y^2 + 4y^2 + 3z^2 + z^2) + (-3x^2 - y^2 - 3y^2 - z^2 + 4xy + 2xy)$

$= (-2x^2 + 3y^2 + 4z^2) + (-3x^2 - 4y^2 - z^2 + 6xy)$

$= -2x^2 + (-3x^2) + 3y^2 + (-4y^2) + 4z^2 + (-z^2) + (+6xy)$

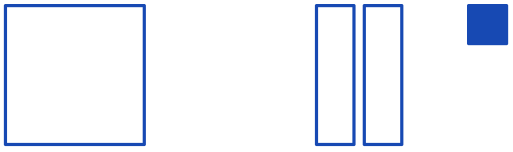
$= -2x^2 - 3x^2 + 3y^2 - 4y^2 + 4z^2 - z^2 + 6xy$

$= -5x^2 - y^2 + 3z^2 + 6xy$

Assignment p. 228 # 1 – 9, 13 – 17 Adding Polynomials Quiz Next Day!
p. 234 # 1 – 8, 13, 15, 17

$2x^2 - 3x + 5$

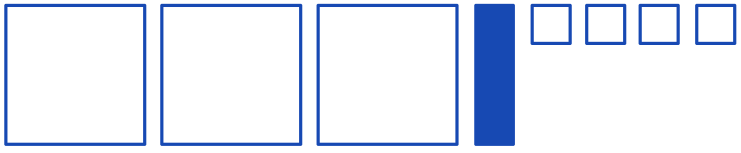
$-(-x^2 - 2x + 1)$



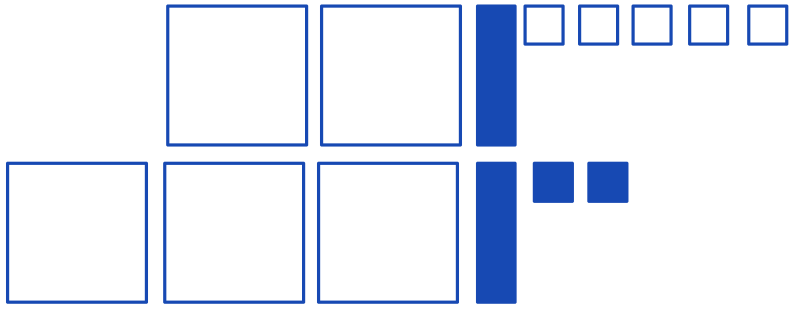
$= 2x^2 - 3x + 5 + x^2 + 2x + 1$

$= 2x^2 + x^2 - 3x + 2x + 5 - 1$

$= 3x^2 - x + 4$



$2x^2 - x + 5$

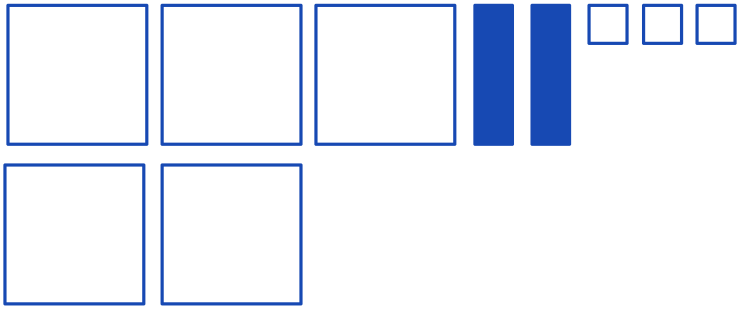


$-(-3x^2 + x + 2)$

$= 2x^2 - x + 5 + 3x^2 - x - 2$

$= 2x^2 + 3x^2 - x - x + 5 - 2$

$= 5x^2 - 2x + 3$



Your Turn! Add the following polynomials. Use algebra tiles if you like!

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

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

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

$= x^2 - 2$

2. $(1 + 2x^2 + 5x) - (x^2 + 5x)$

$= 1 + 2x^2 - x^2 + 5x - 5x$

$= 1 + x^2$

$= x^2 + 1$

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

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

$= (9x^2 + 4x) - (6x + 3)$

$= 9x^2 + 4x - 6x - 3$

$= 9x^2 - 2x - 3$

4. $(9 - 4x + x^2 + 3x - 8) - (-5x + 7 - 3x^2 + 7x^2 - 4 + 3x)$

$= (x^2 - 4x + 3x + 9 - 8) - (-3x^2 + 7x^2 - 5x + 3x + 7 - 4)$

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

$= x^2 - x + 1 - 4x^2 + 2x - 3$

$= x^2 - 4x^2 - x + 2x + 1 - 3$

$= -3x^2 + x - 2$

5. $(3x^2 - y^2 + 3z^2 + 4y^2 - 5x^2 + z^2) - (4xy - y^2 - 3x^2 + 2xy - z^2 - 3y^2)$

$= (3x^2 - 5x^2 - y^2 + 4y^2 + 3z^2 + z^2) - (-3x^2 - y^2 - 3y^2 - z^2 + 4xy + 2xy)$

$= (-2x^2 + 3y^2 + 4z^2) - (-3x^2 - 4y^2 - z^2 + 6xy)$

$= -2x^2 + 3y^2 + 4z^2 + 3x^2 + 4y^2 + z^2 - 6xy$

$= -2x^2 + 3x^2 + 3y^2 + 4y^2 + 4z^2 + z^2 - 6xy$

$= x^2 + 7y^2 + 5z^2 - 6xy$

Assignment p. 228 # 1 – 9, 13 – 17 Quiz Next Day!
p. 234 # 1 – 8, 13, 15, 17

↖ subtracting polynomials