Standard Form $\quad y = \underline{a}x^2 + \underline{b}x + \underline{c}$

$$y = 5x^2 - 3x + 12$$

$a = 5 \quad b = -3 \quad c = 12$

$$y = 9x^2 - 42x + 5$$

$a = 9$
$b = -42$
$c = 5$

Factor Sum Table

Standard Form: $ax^2 + bx + c$

Problem: $3x^2 + 7x + 2$

Label	a= 3	b= 7	c= 2

Factors a*c $3 * 2 = 6$	1, 6	2, 3						
Sum b= 7	7	5						

Rewrite with the middle terms as the factors	$3x^2 + 1x + 6x + 2$
Split into two groups	$(3x^2 + x) + (6x + 2)$
Factor out the GCF	$x(3x+1) + 2(3x+1)$
Write down the duplicate binomial and the place the left overs in a binomial together.	$(3x+1)(x+2)$
Answer	( )( )

Factor Sum Table

Standard Form: $ax^2 + bx + c$

Problem: $3x^2 - 23x + 14$

Label	a= 3	b= −23	c= 14

Factors a*c $3*14 = 42$	−1,−42	−2,21				
Sum b= −23	−43	−23				

Rewrite with the middle terms as the factors	$3x^2 - 21x - 2x + 14$
Split into two groups	$3x^2 - 21x - 2x + 14$
Factor out the GCF	$3x(x-7) - 2(x-7)$
Write down the duplicate binomial and the place the left overs in a binomial together.	$(x-7)(3x-2)$
Answer	( )( )

Factor Sum Table

Standard Form: $ax^2 + bx + c$

Problem: $2x^2 + 15x + 18$

12   123 4 6 12
18   123 6 9 18

Label	a= 2	b= 15	c= 18

Factors a*c $2 * 18 = 36$	1,36	2,18	3,12				
Sum b= 15	31	20	15				

Rewrite with the middle terms as the factors	$2x^2 + 3x + 12x + 18$
Split into two groups	$2x^2 + 3x + 12x + 18$
Factor out the GCF	$x(2x+3) + 6(2x+3)$
Write down the duplicate binomial and the place the left overs in a binomial together.	$(2x+3)(x+6)$
Answer	( )( )

Factor Sum Table

Problem: $4x^2 + 15x - 25$

Standard Form: $ax^2 + bx + c$

Label	a= 4	b= 15	c= -25

Factors a*c $4 * -25 = -100$	-1, 100	-5, 20				
Sum b= 15		15				

Rewrite with the middle terms as the factors	$4x^2 - 5x + 20x - 25$
Split into two groups	$4x^2 - 5x + 20x - 25$
Factor out the GCF	$x(4x-5) + 5(4x-5)$
Write down the duplicate binomial and the place the left overs in a binomial together.	$(4x-5)(x+5)$
Answer	( )( )

Factor Sum Table

Standard Form: $ax^2 + bx + c$

Problem: $V^2 - 6V - 7$

Label	a= 1	b= -6	c= -7

Factors a*c ___ * ___ = -7		-1, 7	(1, -7)				
Sum b=___		6	-6				

Rewrite with the middle terms as the factors	$V^2 + V - 7V - 7$
Split into two groups	$V^2 + V - 7V - 7$
Factor out the GCF	$V(V+1) - 7(V+1)$
Write down the duplicate binomial and the place the left overs in a binomial together.	$(V+1)(V-7)$
Answer	( )( )

Factor Sum Table

Standard Form $ax^2 + bx + c$

Problem __$6x^2 + 5x - 6$__

Label	a=	b=	c=

Factors a*c ___ * ___ = ___								
Sum b=___								

Rewrite with the middle terms as the factors	
Split into two groups	
Factor out the GCF	
Write down the duplicate binomial and the place the left overs in a binomial together.	$(2x+3)(3x-2)$
Answer	