Name: _____
Factoring when a > 1 practice

Directions: For questions 1 - 4, use your knowledge of lattice multiplication to factor the following polynomials.

1. $3x^2 + 14x - 24$

3x	-4
$3x^2$	-4x
18x	-24

x 6

-	+	=
1	72	71
2	36	34
3	24	21
4	18	14
6	12	6
8	9	1

Final: $3x^2 + 14x - 24 = (3x - 4)(x + 6)$

2. $5x^2 + 62x + 77$

x	11
$5x^2$	55x
7x	77

5x 7

+	+	=
1	385	386
5	77	82
7	55	62

Final: $5x^2 + 62x + 77 = (x + 11)(5x + 7)$

3. $4x^2 - 16x - 9$

2x	1
$4x^2$	2x
-18x	-9

2x -9

+	-	=
1	36	-35
2	18	-16
3	12	-9
4	9	-5
6	6	0

Final: $4x^2 - 16x - 9 = (2x + 1)(2x - 9)$

4. $6x^2 - 53x + 60$

3x	-4
$6x^2$	-8x
-45x	60

2x -15

-	-	=
1	360	-361
2	180	-182
3	120	-123
4	90	-94
5	72	-77
6	60	-66
8	45	-53
9	40	-49
10	36	-46
12	30	-42
15	24	-39
18	20	-38

Final: $6x^2 - 53x + 60 = (3x - 4)(2x - 15)$