Name: _____
Factoring when a = 1 practice

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

1. $x^2 - 13x + 42$

x	-6
x^2	-6x
-7x	42

-	-	=
1	42	-43
2	21	-23
3	14	-17
6	7	-13

x

-7

Has to be 2 negatives to be positive when multiplying and negative when adding.

Final: $x^2 - 13x + 42 = (x - 6)(x - 7)$

2. $x^2 + 2x - 63$

x	-7
x^2	-7x
9x	-63

-	+	=
1	63	62
3	21	18
7	9	2

x

+	-	=
1	63	-63
3	21	-18
7	9	-2

9

One of the numbers has to be positive while the other has to be negative to multiply to get a negative number. The bigger number has to be positive to get a positive number when adding.

Final: $x^2 + 2x - 63 = (x - 7)(x + 9)$

3. $x^2 + 11x + 10$

x	10
x^2	10x
1x	10

+	+	=
1	10	11
2	5	7

x

1

Has to be 2 positives to be positive when Multiplying and positive when adding

Final: $x^2 + 11x + 10 = (x + 10)(x + 1)$

4. $x^2 - 21x - 100$

x	-25
x^2	-25x
4x	-100

-	+	=
1	100	99
2	50	48
4	25	21
5	20	15
10	10	0

x

+	-	=
1	100	-99
2	50	-48
4	25	-21
5	20	-15
10	10	0

4

One number has to be +
Other has to be negative
Bigger number has to be negative

Final: $x^2 - 21x - 100 = (x - 25)(x + 4)$