Factoring Trinomials using AC Method

Standard form for a second degree polynomial is Ax ² + Bx + C

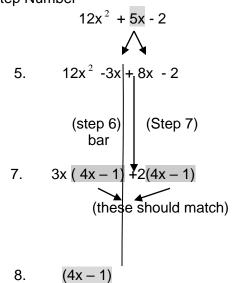
Factor $12x^2 + 5x - 2$

- Create a chart with 2 columns -A* C on one side and B on the other.
- 3. Sum up each pair of factors and put that answer in column B (under the 5)
- 4. Find the pair that matches the B value at the top of that column.
- 5. Use the pair of factors to rename the middle term in the trinomial. The order of the 2 terms doesn't matter but the signs do matter. REMEMBER to put the variable with these coefficients.
- 6. Group these terms into sets of 2 by drawing a bar. Include the operation on the right side of bar.
- Find the GCF for each pair individually and factor it out. The sign of the third term needs to be the same as the GCF for that pair.
- 8. Find the common parentheses and factor it out.
- 9. The second pair of parentheses will be formed with the terms left.

Note: You can check your answer by using foil. If you are correct you will get the original trinomial back.

Step	Multiply	Sum
#	X	+ or -
1	A*C	В
1	12*(-2)	5
2	-24	5
	1*(-24)	-23
	-1*24	23
	2*(-12)	-10
	-2*12	10
	3*(-8)	-5
4	-3*8	5
	4*(-6)	-2
	-4*6	2
\oplus	6*(-4)	Repea
		t - stop

Step Number



9.
$$(3x + 2)$$

Answer
$$(4x - 1)(3x + 2)$$

Check
$$12x^2 + 8x - 3x - 2$$

 $12x^2 + 5x - 2$