

Do Now- Factor the following: $x(x+4)+5(x+4)$
 $(x+4)(x+5)$

AIM: INTRO TO FACTORING "HARD" TRINOMIALS
Guided Practice

- 1) Multiply the first and last coefficients. ("headphones")
- 2) Find factors that add or subtract to the middle term and multiply to the product of the first and last coefficients.
- 3) Rewrite the problem with 4 terms.
- 4) Factor by "Grouping"- Split problem down the middle.
- 5) Factor the 1st two terms (GCF).
- 6) Copy the () on the other side.
- 7) Put the GCF of last two terms in front.
- 8) Factor using GCF- Your GCF will be a common ().
- 9) Check by Double Distributing.

$2x^2 + 7x + 3$ Multiply 6 Add to 7

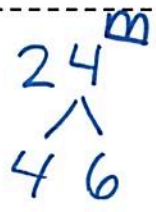
$$\begin{array}{l} 2x^2 + 6x \quad | \quad +1x + 3 \\ 2x(x+3) \quad | \quad +1(x+3) \end{array}$$

Answer $\rightarrow (2x+1)(x+3)$

1. $3x^2 + 10x + 8$

$3x^2 + 6x \quad | \quad +4x + 8$
 $x(x+2) \quad | \quad 4(x+2)$

$(x+2)(3x+4)$



1	24
-1	-24
2	12
-2	-12
3	8
-3	-8
4	6
-4	-6

2. $2x^2 + 7x + 6$

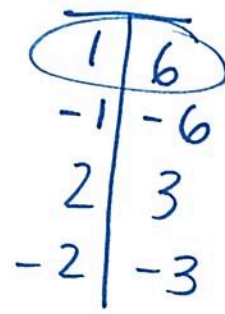
$2x^2 + 4x \quad | \quad +3x + 6$
 $x(x+2) \quad | \quad 3(x+2)$

$(2x+3)(x+2)$



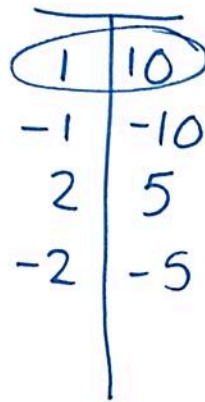
1	12
-1	-12
2	6
-2	-6
3	4
-3	-4

3. $(2x^2 + 7x + 3)$



$$\begin{array}{r} 2x^2 + x + 6x + 3 \\ x(2x+1) \quad | \quad 3(2x+1) \\ \hline (x+3)(2x+1) \end{array}$$

4. $(2x^2 + 11x + 5)$



$$\begin{array}{r} 2x^2 + x + 10x + 5 \\ (2x+1) \quad | \quad 5(2x+1) \\ \hline (x+5)(2x+1) \end{array}$$