

Name:

Date:

Period:

HW #7-5: Factoring Quadratic Expressions when $a > 1$ (Algebra 1 Review)

Example: $ax^2 + bx + c$

$$2b^2 + 17b + 21$$



$$\begin{array}{c} \overbrace{2b^2 + 3b} + \overbrace{14b + 21} \\ \downarrow \qquad \downarrow \\ b(2b + 3) + 7(2b + 3) \\ \swarrow \searrow \\ (2b + 3)(b + 7) \end{array}$$

① separate the "b" term into
2 #s that add to $a \cdot c$
and add to b

think: what multiplies to
 $2 \cdot 21 = 42$ but also adds
to 17?

think: what are factors of
42?

2, 21

3, 14 ← can make 17!
+3, +14

② factor by grouping
factor common terms
out of the first 2 terms
and the last 2 terms

③ now factor out the
common term

2. $7x^2 - 32x - 60$

3. $10m^2 + 89m - 9$

4. $7x^2 - 31x - 20$

1. $5p^2 - p - 18$

5. $9r^2 - 5r - 10$

