7-6 Reteach to Build Understanding

Factoring $ax^2 + bx + c$

1. Label each item as *factor by grouping* or *factor using substitution*.

   To factor a trinomial of the form $ax^2 + bx + c$, find a factor pair of ac that has the sum of b. Rewrite bx as a sum of those factors. Then factor out the GCF from the two groups of terms to write the original trinomial as the product of two binomials.

   _____

   To factor a trinomial of the form $ax^2 + bx + c$, multiply the trinomial by a. Rewrite the first two terms using ax. Substitute a single variable for ax. Factor the trinomial. Substitute ax back in for the variable. Divide by a.

   _____

2. Factor each polynomial.

   Factor $2x^2 - 9x - 5$ using substitution.

   _____$(2x^2 - 9x - 5)$

   $= (2x)^2 - 9(\_\_\_\_) - \_\_\_\_$

   $= p^2 - \_\_\_\_ - \_\_\_\_$

   $= (p - \_\_\_\_)(p + \_\_\_\_)$

   $= (2x - \_\_\_\_)(2x + \_\_\_\_)$

   $= 2(\_\_\_\_)(\_\_\_\_)$

   _____

   Factor $2x^2 + 11x + 5$ by grouping.

   $= 2x^2 + \_\_\_\_ + \_\_\_\_ + 5$

   $= 2x(\_\_\_\_) + 1(\_\_\_\_)$

   $= _____$

3. Describe and correct the error a student made in factoring $2x^2 + 13x + 21$ using substitution.

   $2x^2 + 13x + 21$

   $2(2x^2 + 13x + 21)$

   $= (2x)^2 + 13(2x) + 42$

   $= p^2 + 13p + 42$

   $= (p + 6)(p + 7)$

   $= (2x + 6)(2x + 7)$