2-3 Reteach to Build Understanding

Factored Form of a Quadratic Function

1. Factor the quadratic equation $y = x^2 - 5x + 6$.

   Step 1: Find the coefficients of each term a, b, and c. $a = \underline{\ 1\ }$, $b = \underline{\ -5\ }$, $c = \underline{\ \ \ }$

   Step 2: Look for factors with product ac and sum b. $ac = \underline{\ \ \ }$ and $b = -5$

   Step 3: Use the Distributive Property to expand the product and find two numbers.

Factors of 6	1, 6	−1, −6	2, 3	−2, −3
Sum of factors				

   The numbers −2 and −3 have product 6 and sum −5. Then rewrite −5x as _____ and _____.

   Step 4: Rewrite the equation as $y = x^2$ _____ $+ 6$

   $\qquad\qquad = \underline{\ \ \ }(x - 2) - 3(\underline{\ \ \ \ \ })$

   $\qquad\qquad = (x - 2)(\underline{\ \ \ \ \ })$

   The factored form of the equation is $y = (x - 2)(\underline{\ \ \ \ \ })$.

2. Joshua is j years old. The product of his younger brother's and older sister's ages is $j^2 - 4j - 21$. How old are Joshua and his sister?

   The zeros of the expression $j^2 - 4j - 21$ are the solutions of the equation $0 = j^2 - 4j - 21$.

$j^2 - 4j - 21 = 0$	Set the expression equal to 0.
$(j + \underline{\ \ \ })\, (j + \underline{\ \ \ }) = 0$	Write the equation in factored form.
$j + \underline{\ \ \ \ \ \ \ \ }$ or $j + \underline{\ \ \ \ \ \ \ \ }$	Use Zero Product Property.
$j = \underline{\ \ \ }$ or $j = \underline{\ \ \ }$	Solve.

   Joshua's age cannot be negative, so $j = \underline{\ \ \ }$; Joshua's sister is _____ year(s) old; Joshua's brother is _____ year(s) old; Joshua is _____ year(s) old.

3. A student says that the zeros of the quadratic equation $y = x^2 - 10x + 21$ are −3 and −7. Is the student correct? If not, describe and correct the error the student made.