Name _____

7-7 Reteach to Build Understanding

Factoring Special Cases

1. Label each item as *perfect-square trinomial* or *difference of two squares*.

$a^2 - b^2 = (a + b)(a - b)$ _____

$x^2 - 12x + 36 = (x - 6)^2$ _____

Use this pattern when the first and last terms are perfect squares and the middle term is twice the product of the expressions being squared. _____

$a^2 - 2ab + b^2 = (a - b)^2$ _____

Use this pattern when a binomial can be written as the square of one number minus the square of another number. _____

$4x^2 - 49 = (2x - 7)(2x + 7)$ _____

$a^2 + 2ab + b^2 = (a + b)^2$ _____

2. Complete the steps for factoring $2x^3 - 36x^2 + 162x$ by writing words, numbers, or expressions in the blanks.

$2x^3 - 36x^2 + 162x =$ _____ $(x^2 - 18x + 81)$ Factor out _____.

$=$ _____ $[x^2 - 2($_____$)x + ($_____$)^2]$ Rewrite the trinomial.

$=$ _____ $(x -$ _____$)(x -$ _____$)$ Use the _____ pattern.

$=$ _____ $(x -$ _____$)^2$ Simplify.

3. Describe and correct the error Teddy made in factoring $x^2 - 49$.

$x^2 - 49 = (x - 7)^2$

Both terms in the binomial are perfect squares, so use the perfect–square trinomial pattern.