7.4 Factoring Special Products

Perfect-square trinomial- any trinomial of the form $a^2 + 2ab + b^2$

Rule: $a^2 + 2ab + b^2 = (\quad)(\quad) = (\quad)$

$a^2 - 2ab + b^2 = (\quad)(\quad) = (\quad)$

1. Ex. Factor the following

a. $x^2 - 6x - 9$

b. $9x^2 - 12x + 4$

c. $4x^2 + 36x + 81$

d. $9a^2 - 12ab + 4b^2$

Difference of Two Squares (DOTS) in the form $a^2 - b^2$

Rule: $a^2 - b^2 = (\quad)(\quad)$

2. Factor

a. $m^2 - 64$ b. $4x^2 - 81$ c. $25y^2 - 121$ d. $p^4 - 81$

3. Factor

a. $28k^2 - 7$ b. $3c^2 - 75$ c. $-9x^2 + 100$

d. $16p^2 - 48pq + 36q^2$ e. $25x^2 + 81$ f. $48c^4 - 3$

Completing the Square

*When completing the square our goal is to get one side to be a _____

so we can factor it.

a) $y^2 + 20y + \_\_\_\_\_ = (\quad)^2$ b) $x^2 + 3x + \_\_\_\_\_ = (\quad)^2$

c) $a^2 - 5a + \_\_\_\_\_ = (\quad)^2$ d) $x^2 + \_\_\_\_\_ + 100 = (\quad)^2$

e) $x^2 - \_\_\_\_\_ + \frac{9}{16} = (\quad)^2$

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