4.7 Factoring Perfect Square and Difference of Squares Trinomials

A) Difference of Squares

Expand: $(x + 3)(x - 3)$ $(3m - 1)(3m + 1)$ $(a + b)(a - b)$

How are the binomials above alike?

Rule:

Ex. 1 Factor the following completely.

a) $m^2 - 16$ b) $4a^2 - 49$ c) $64x^2 - 9y^2$

d) $8x^2 - 50$ e) $x^4 - 16$

B) Perfect Square Trinomials

Expand:

$(x + 3)^2$ $(3m - 1)^2$ $(a + b)^2$ $(a - b)^2$

RULE:

Ex. 2 Factor the following completely.

a) $m^2 - 10m + 25$

b) $y^2 + 2y + 1$

c) $4x^2 + 28x + 49$

d) $16a^2 - 24a + 9$

e) $x^2 - 18x + 81$

f) $x^4 - 8x^2 + 16$

Ex. 3 Factor the following completely.

a) $4m^2 + 20$

b) $6y^2 + 24y - 72$

c) $9a^3 - a$

d) $2y^2 - 98$