Factoring Special Products

May 25

difference of 2 squares

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

Factor completely:

1. $16x^2 - 49$

$(4x)^2 - (7)^2$

$(4x - 7)(4x + 7)$

2. $45x^2 - 500$

$5(9x^2 - 100)$

$(3x)^2 \quad (10)^2$

$5(3x - 10)(3x + 10)$

trinomial squares

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

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

Factor completely:

3. $x^2 + 8x + 16$

$(x)^2 \quad 2(4x) \quad (4)^2$

$= (x + 4)^2$

$(x + 4)(x + 4)$

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

$(3x)^2 \quad 2(3x)(2) \quad (2)^2$

$(3x - 2)^2$

5. $3x^2 - 30x + 75$

$3(x^2 - 10x + 25) = 3(x - 5)^2$