The Difference of Two Squares   D.O.T.S.

The square numbers

$$1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2, 8^2, 9^2, 10^2, 11^2, 12^2, 13^2$$

$$= 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169$$

Factorizing by D.O.T.S The expression will only have two terms, the terms will have <u>squared</u> variables or squared numbers

Rule: The brackets <u>MUST</u> be the same values BUT The <u>SIGNS</u> <u>MUST</u> be different.

Eg 1) Factorize

$$x^2 - y^2$$

$$x \ x \quad y \ y$$

$$(x + y)(x - y)$$

Eg 2) Factorize

$$36x^2y^2 - 49k^2H^2$$

$$6, 6 \ x \ x \ y \ y \quad 7, 7, k \ k, H \ H,$$

$$(6xy + 7kH)(6xy - 7kH)$$

Eg 3 $49 - 144y^2$

$$7 \ 7 \quad 12 \ 12 \ y \ y$$

$$(7 \quad + 12y)(7 \quad - 12y)$$

Eg 4) $a^2b^2 - 4$

$$a \ a \ b \ b \quad 2 \ 2$$

$$(ab - 2)(ab + 2)$$

Eg 5) $1 - 81x^2$

$$(1 - 9x)(1 + 9x)$$