The National
Orthodox School
Shmaisani

Name: Dalia al ahmad **Worksheet(1)** **Grade:8(A, B)**

Subject : Multiplying algebraic expressions (special cases) **Date :**

Expand and Simplify each of the following :

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

***Example*:**

1 $(3k+5)^2$

$(a+b)^2 = a^2 + 2ab + b^2$ قانونُ مربعِ مجموعِ حدَّين

$(3k+5)^2 = (3k)^2 + (2 \times 3k \times 5) + (5)^2$ $a = 3k,\ b = 5$

$= 9k^2 + 30k + 25$ أبسطُ

2 $(y^2+3)^2 = (y^2)^2 + 2*y^2*3 + (3)^2$

$= y^4 + 6y^2 + 9$

3 $(2c+10)^2$ $2c^2 + 2*2c*10 + 10^2$

$4c + 40c + 100$

❹ $(d^2+4)^2$ $d^{2\,2} + 2 * d^2 * 4 + 4^2$

$d^4 + 8d^2 + 8$

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

Example:

❶ $(2h-z)^2$

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

$(2h-z)^2 = (2h)^2 - (2 \times 2h \times z) + (z)^2$

$= 4h^2 - 4hz + z^2$

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$a =$

❷ $(6-5y^3)^2$ $6^2 - 2 * 6 * 5y^2 + 5y^{3\,2}$

$-60y^2 + 10y^6$

❸ $(7t^2-1)^2$ $7t^{2\,2} - 2 * 7t^2 * 1 + (1)^2$

$49t^4 - 21t^2 + 1$

❹ $(x^3-4y^2)^2$ $x^{3\,2} - 2 * x^3 * 4y^2 + 4y^{2\,2}$

$x^6 - 8x^3y^2 + 16y^4$

2 $(4x^2 + d^5)(4x^2 - d^5)$

$(4x^2 + d^5)(4x^2 - d^5)$

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$= 16x^4 - d^{10}$

$(4x^2 + d^5)(4x - d^5)$

$16x^4 - 4x^2 d^5 + 4x^2 d^5 - d^{10}$

$= 16x^4 - d^{10}$

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3 $(6w + d^4)(6w - d^4)$

$(6w)^2 - d^8$

$36w - d^8$

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4 $(x^3 + 3h^7)(x^3 - 3h^7)$

$x^3 * x^3 = x^9 = x^9 - 3h^{21}$

$3h^7 - 3h^7 = (3h)^{21}$

Wisam Al – mashni