

Worksheet (1) The Secondary Stage of (6-8)

1st Semester | 2023-2024

Name:

Subject: math

Date: / /

Class: Grade 8

Objectives:

Multiplying algebraic expressions (special cases)

Expand and Simplify each of the following :

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

Example :

1 $(3k + 5)^2$

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

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

$$= 9k^2 + 30k + 25$$

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$$a = 3k, b = 5$$

أبسط

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

3 $(2c + 10)^2$

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$$4 \quad (d^2 + 4)^2$$

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

Example:

$$1 \quad (2h - z)^2$$

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

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

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

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$$a = 2h, b = z$$

أبسطُ

$$2 \quad (6 - 5y^3)^2$$

$$3 \quad (7t^2 - 1)^2$$

$$4 \quad (x^3 - 4y^2)^2$$

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

Example :

① $(2c + 3)(2c - 3)$

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

$$(2c+3)(2c-3) = (2c)^2 - 3^2$$

$$= 4c^2 - 9$$

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$$a = 2c, b = 3$$

أعوّض
أبسط

② $(4x^2 + d^5)(4x^2 - d^5)$

③ $(6w + d^4)(6w - d^4)$

④ $(x^3 + 3h^7)(x^3 - 3h^7)$