



The National
Orthodox School
Shmaisani

Name:

Worksheet(5)

Grade:8(A, B)

Subject: Factorising using Difference of two squares

Date :

Difference of Two Squares

Difference of two squares is a type of quadratic factorisation used when an algebraic expression is made up of a squared term subtracted from another squared term.

To factorise expressions in the form $a^2 - b^2$ we need **double brackets**.

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

Factorising

Expanding brackets



Factor Difference of Perfect Squares

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

Examples:

$$\begin{aligned} 16x^2 - 25 \\ &= (4x)^2 - 5^2 \\ &= (4x + 5)(4x - 5) \end{aligned}$$

$$\begin{aligned} 3x^2 - 75y^2 \\ &= 3(x^2 - 25y^2) \\ &= 3(x^2 - (5y)^2) \\ &= 3(x + 5y)(x - 5y) \end{aligned}$$

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Exercise (1): factorise each of the following expressions completely:

1 $u^2 - 64$

2 $\frac{1}{9}x^2 - \frac{1}{25}$

3 $36y^2 - 1$

4 $v^4 - 625r^2$

5 $a^2 - w^2z^2$

6 $-16y^2 + 49$

7 $ab^2 - 100a$

8 $x - x^3$

9 $12b^3 + 2b^2 - 192b - 32$

10 $d^3 - 5d^2 - 100d + 500$

Exercise (2): factorise each of the following expressions completely:

1 $a^2 - 49$

2 $100 - w^2$

3 $9y^2 - 36$

4 $x^2y^2 - 64$

5 $r^2 - 0.36m^2$

6 $24c^2 - 6$

7 $5y^3m - 45ym^3$

8 $w^4 - k^4$

9 $-y^2 + 144x^2$

$$\textcircled{10} \quad \frac{1}{16}y^2 - \frac{4}{9}$$

$$\textcircled{11} \quad xb^2 - x^3 + y^2b^2 - y^2x^2$$

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