

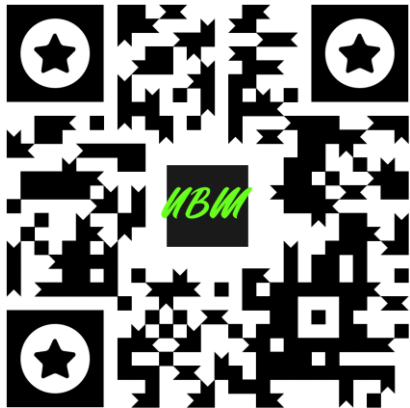
# MATHEMATICS

## Topic: ALGEBRA, EQUATIONS, AND INEQUALITIES GRADE 10

CAPS ALIGNED

**FACTORISE**

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**Factorise - GRADE 10**  
**Exercises - A**

**DBE/NOVEMBER 2015**

**QUESTION 1**

1.1 Factorise the following expressions fully:

1.1.1  $x^4 - 81$

1.1.2  $6x^2y - 10xy + 15x - 25$

$$1.1.1 \quad x^4 - 81 \\ = (x^2)^2 - 9^2$$

$$= (x^2 - 9)(x^2 + 9)$$

$$= (x - 3)(x + 3)(x^2 + 9)$$

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

$$1.1.2 \quad 6x^2y - 10xy + 15x - 25 \\ = (6x^2y - 10xy) + (15x - 25) \\ = 2xy(3x - 5) + 5(3x - 5) \\ = (3x - 5)(2xy + 5)$$

## Factorise - GRADE 10

### Exercises - B

DBE/NOVEMBER 2016

#### QUESTION 1

1.1 Factorise the following expressions fully:

1.1.1  $x^2 - x$

1.1.2  $3x^2 + 3px - 2mx - 2mp$

1.1.3  $2p^2 - 2p - 12$

$$1.1.1 \quad x^2 - x$$

$$= x(x - 1)$$

$$1.1.2 \quad 3x^2 + 3px - 2mx - 2mp$$

$$= (3x^2 + 3px) + (-2mx - 2mp)$$

$$= 3x(x + p) - 2m(x + p)$$

$$= (x + p)(3x - 2m)$$

$$1.1.3 \quad 2p^2 - 2p - 12$$

$$= 2(p^2 - p - 6)$$

$$= 2(p + 2)(p - 3)$$

## Factorise - GRADE 10

### Exercises - C

DBE/NOVEMBER 2017

1.2 Factorise the following expressions fully:

1.2.1  $t^2(r-s) - r + s$

1.2.2  $\frac{x^3+1}{x^2-x+1}$

$$\begin{aligned} 1.2.1 \quad & t^2(r-s) - r + s \\ &= t^2(r-s) - (r-s) \\ &= (r-s)(t^2 - 1) \\ &= (r-s)(t-1)(t+1) \end{aligned}$$

$$\begin{aligned} 1.2.2 \quad & \frac{(x^3+1)}{(x^2-x+1)} \\ &= \frac{(x+1)\cancel{(x^2-x+1)}}{\cancel{(x^2-x+1)}} \\ &= x+1 \end{aligned}$$

## Factorise - GRADE 10

### Exercises - D

DBE/NOVEMBER 2018

#### QUESTION 1

1.1 Factorise the following expressions fully:

1.1.1  $4x - x^3$

1.1.2  $x^2 + 15x - 54$

1.1.3  $y - xy + x - 1$

$$\begin{aligned} 1.1.1 \quad & 4x - x^3 \\ & = x(4 - x^2) \\ & = x(2 - x)(2 + x) \end{aligned}$$

$$\begin{aligned} 1.1.2 \quad & x^2 + 15x - 54 \\ & = (x + 18)(x - 3) \end{aligned}$$

$$\begin{aligned} 1.1.3 \quad & y - xy + x - 1 \\ & = (-y - x - 1) + (x - 1) \\ & = -y(1 - x) + (x - 1) \\ & = -y(x - 1) + (x - 1) \\ & = (x - 1)(-y + 1) \\ & = -(x - 1)(y - 1) \end{aligned}$$

END

$$e^{i\pi} + 1 = 0$$

Euler's Identity

## SOURCES

- 1. FET CAPS DOCUMENT**
- 2. GRADE 10 EXAMINATION GUIDELINES**
- 3. GRADE 10 DBE/NOVEMBER 2015 -2018**