UDAAN

2026

POLYNOMIALS

MATHS LECTURE-2

BY-RITIK SIR

Topics *to be covered*

NCERT

A General form of polynomials

B Geometrical meaning of zeroes of Polynomials

C Middle term splitting

RITIK SIR

JOIN MY OFFICIAL TELEGRAM CHANNEL

General Form of Polynomials

$d=1$

Linear Polynomial

$ax+b$

$a, b \in R$

$a \neq 0$

Constant term.

$a \neq 0$

$a, b \in R$

belongs to.

$2x+5$

$-3x+0$

$\frac{5}{2}x+6$

$-400x+3$

$d=2$

ax^2+bx+c

$a, b, c \in R$

$a \neq 0$

Quadratic Polynomial

$2x^2-3x+5$

$-3x^2+5x+3$

$-5x^2+2+0x$

$-3x^2-3x+0$

$5x^2+3+0x$

General Form of Polynomials

$d=3$

Cubic Polynomial

ax^3+bx^2+cx+d

$a,b,c,d \in R$

$a \neq 0$

$6x^3-3x^2+5x+2$

$7x^3-3x^2+0x+0$

$6x^3+2x+0x^2+0$

$-2x^3-2+0x^2+0x$

General Form of any polynomial

$a_n x^n + a_{n-1} x^{n-1} + a_{n-2} x^{n-2} + a_{n-3} x^{n-3} \ldots\ldots\ldots\ldots$

$a_4 x^4 + a_3 x^3 + a_2 x^2 + a_1 x^1 + a_0 x^0$

d = n

Ex: d = 4

$4x^4 - 5x^3 + 2x^2 - 5x + 3x^0$

$a_4 x^4 + a_3 x^3 + a_2 x^2 + a_1 x^1 + a_0 x^0$

$a_4 = 4$ $\quad a_1 = -5$

$a_3 = -5$ $\quad a_0 = 3$

$a_2 = 2$

d = 3

$-5x^3 + 2x^2 - 3x + 2x^0$

n = 3

$a_3 x^3 + a_2 x^2 + a_1 x^1 + a_0 x^0$

$a_3 = -5$

$a_2 = 2$

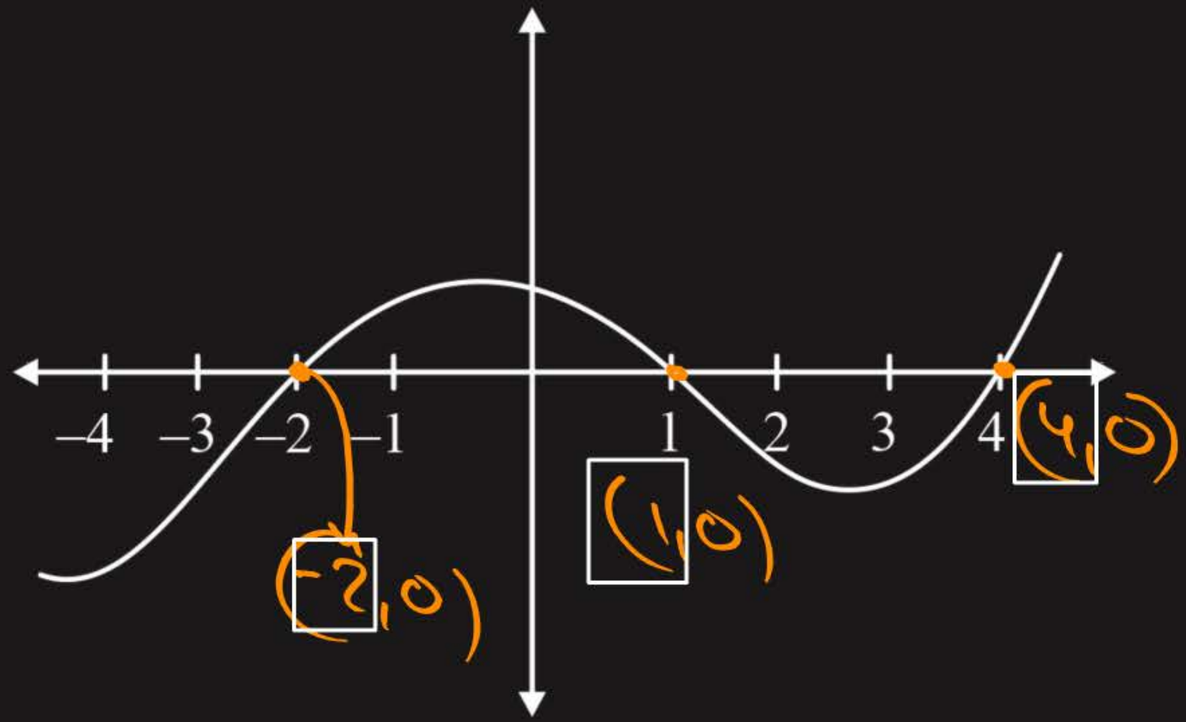
$a_1 = -3$

$a_0 = 2$

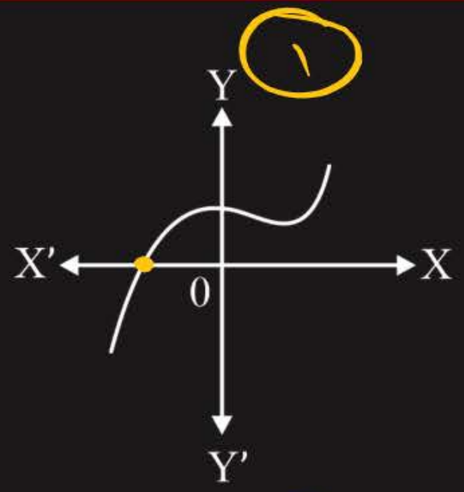
Geometrical Meaning of Zeroes of a Polynomial

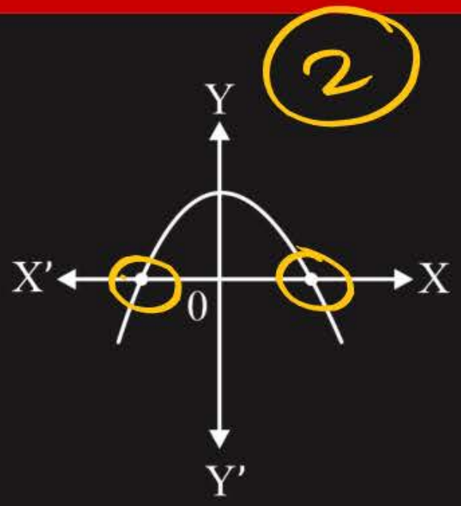
#Q. Number of Zeroes = ? 3

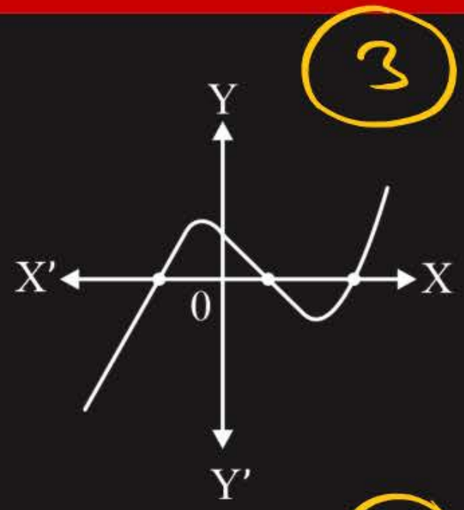
Zeroes = ? −2, 1, 4

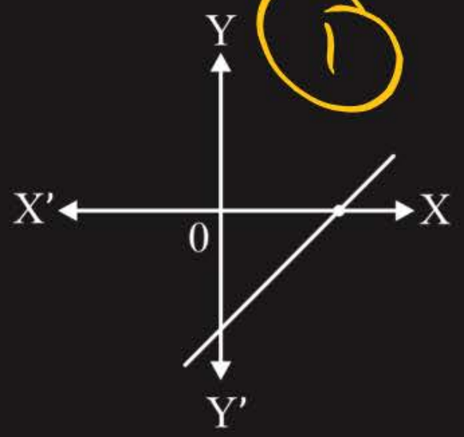


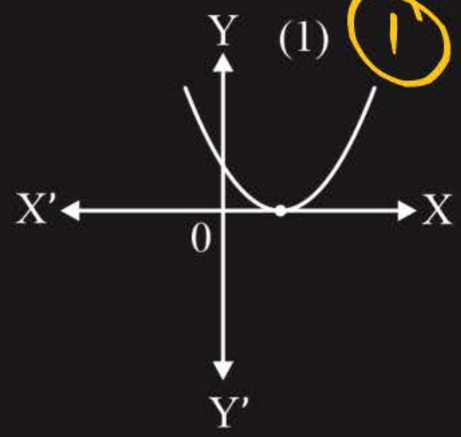
#Q. Look at the graphs given below. Each is the graph of y = p(x), where p(x) is a polynomial. For each of the graph, find the number of zeroes of p(x).

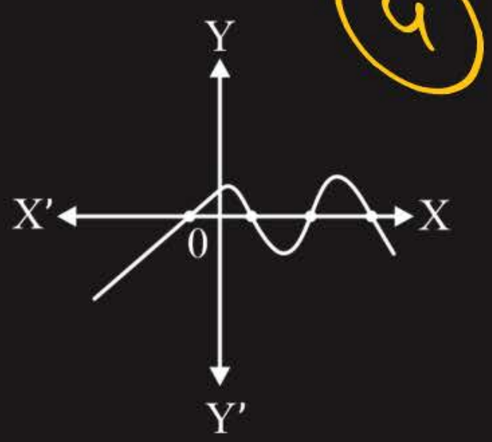












Graphs of Polynomials

Linear → Straight line.

1. Graphs of a Linear Polynomial:

$f(x) = 2x - 5$

d = 1 → no. of zeroes = 1

zero = 5/2

$2x - 5 = 0$

$2x = 5$

$x = 5/2$

$f(x) = 2x - 5$

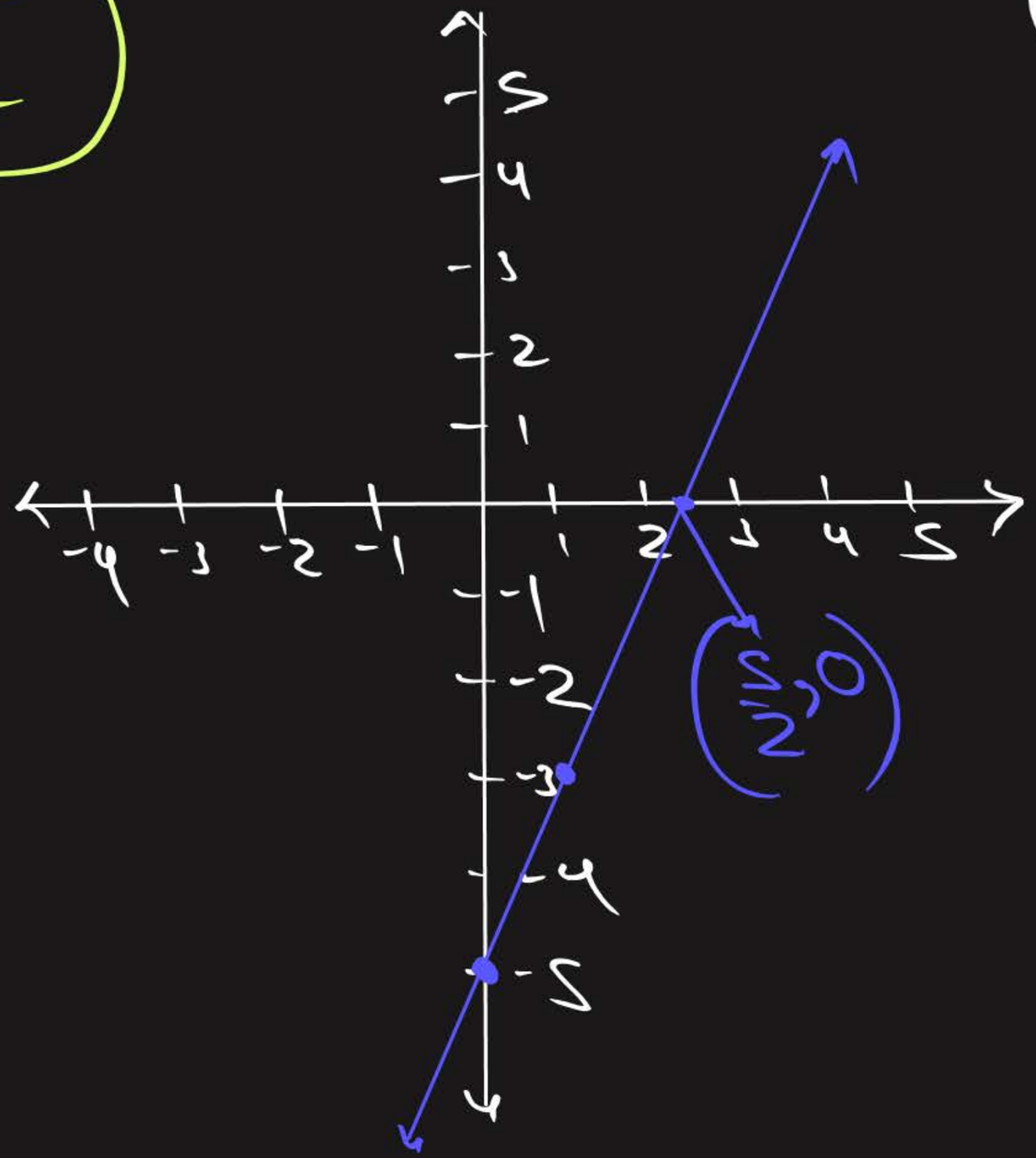
$y = 2x - 5$

x	0	1
y	-5	-3

$(0, -5), (1, -3)$

no of zero = 1.

zero = 5/2



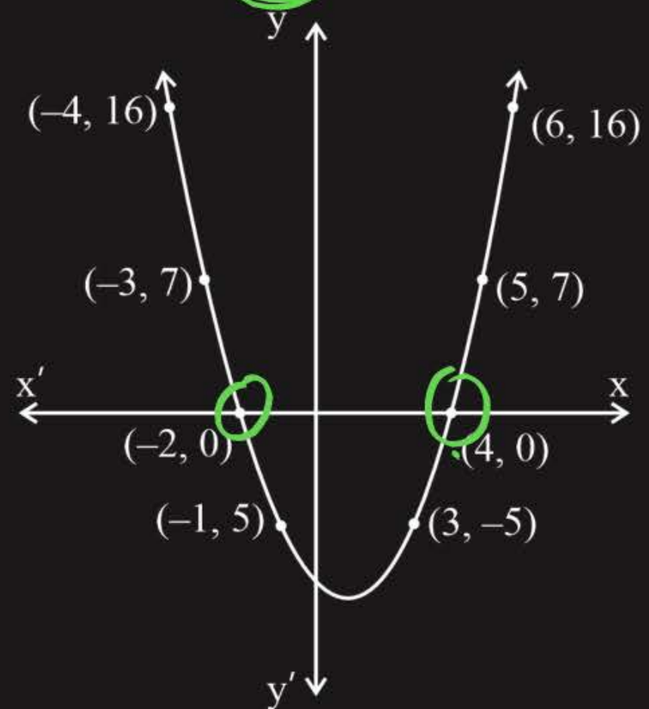
Graphs of Polynomials

Parabola

2. Graphs of a Quadratic Polynomial:

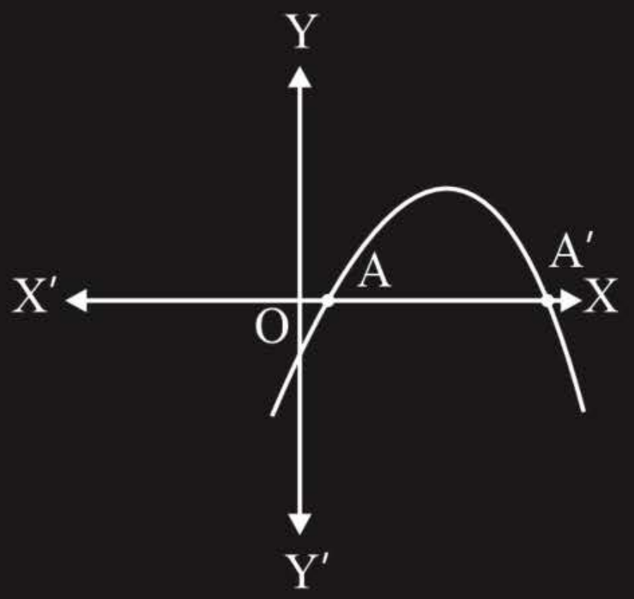
x	–4	–3	–2	–1	0	1	2	3	4	5	6
$y = x^2 - 2x - 8$	16	7	0	–5	–8	–9	–8	–5	0	7	16

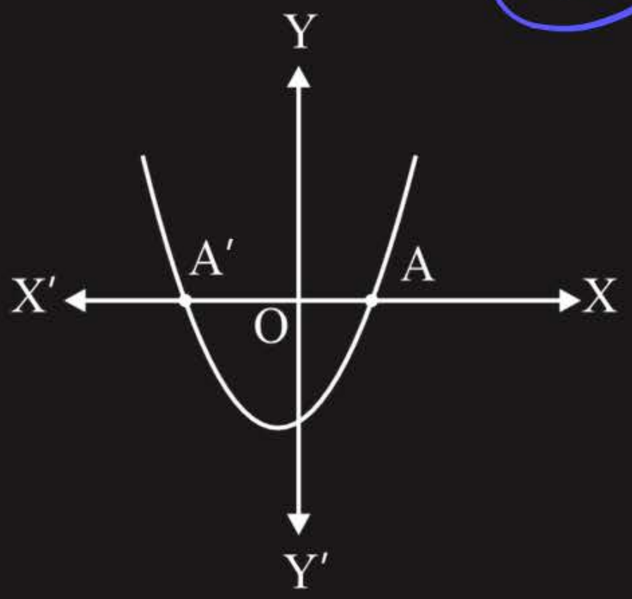
-2, 4



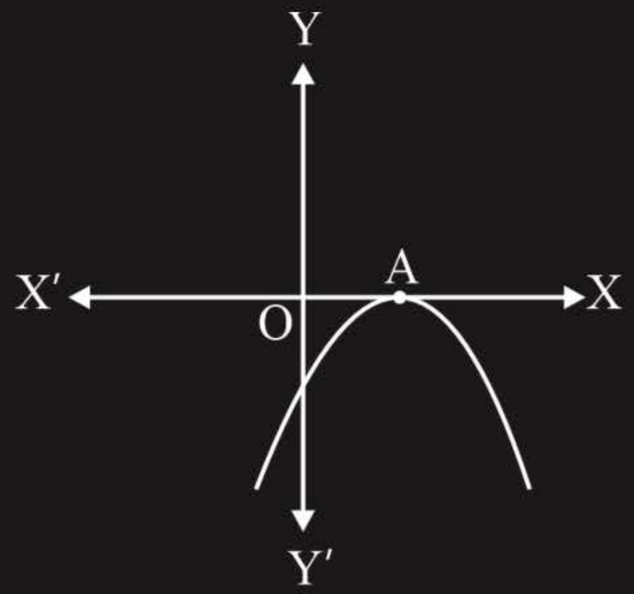
Case : (i)

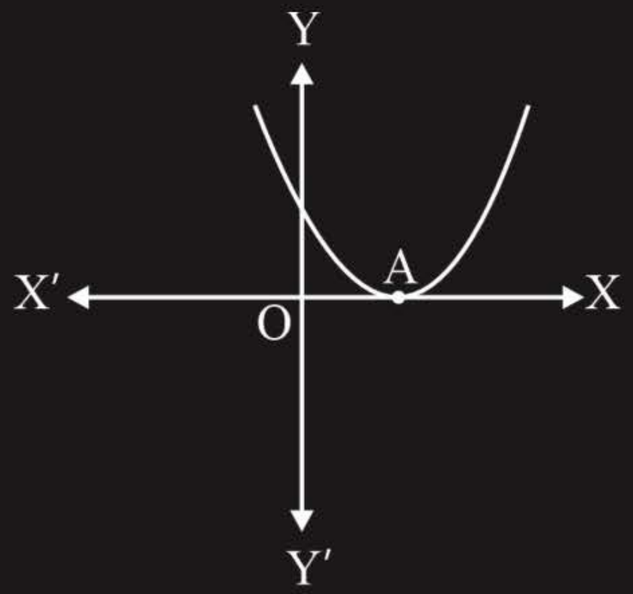
- Here, the graph cuts x-axis at two distinct points A and A'.





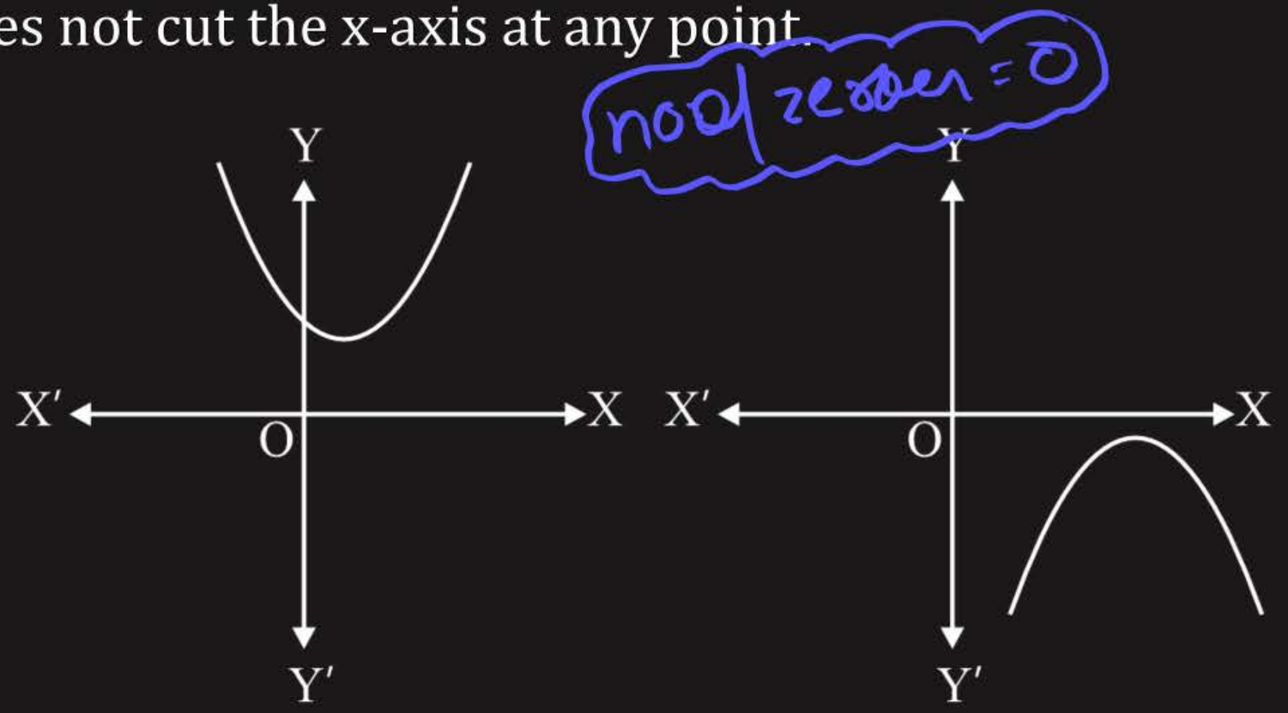
Case : (ii)





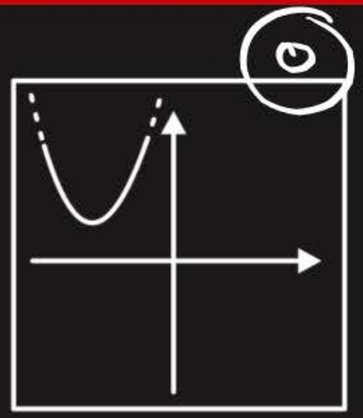
Case : (iii)

- Here, the graph is either completely above the x-axis or completely below the x-axis. So, it does not cut the x-axis at any point.

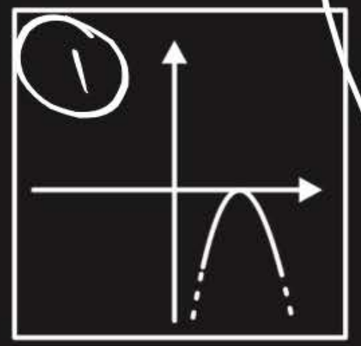


#Q. Which of the following is not the graph of a quadratic polynomial?

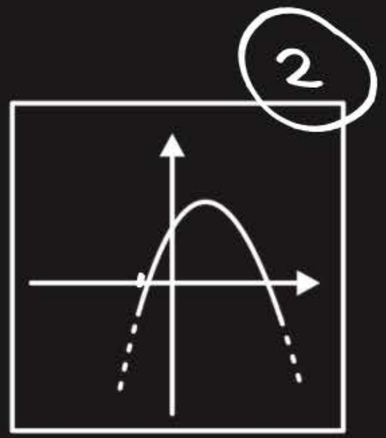
A



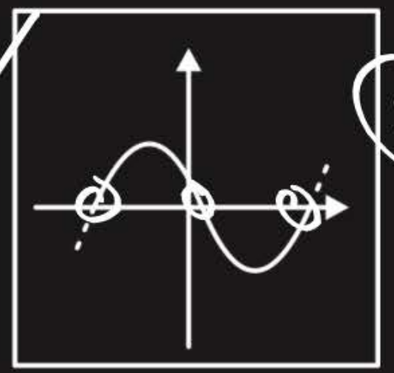
B



C



D



ax^2+bx+c
$a \neq 0, a, b, c \in R$

$d = 2$

Maximum no. of zeroes = 2.

#Q. The graph of a quadratic polynomial p(x) passes through the points (−6, 0), (0, −30), (4, −20) and (6, 0). The zeroes of the polynomial are

$y = ax^2 + bx + c$

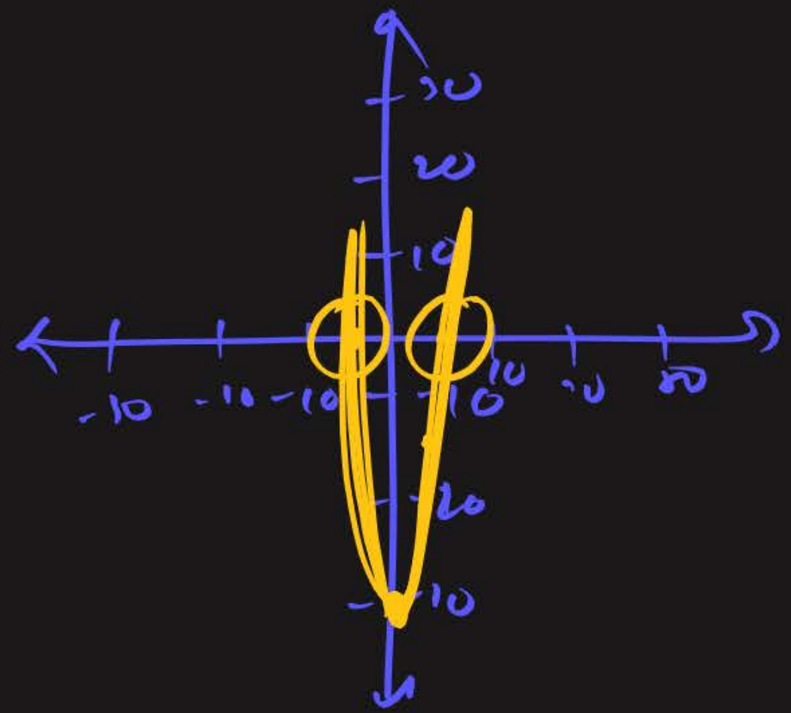
Polynomial ki value.

A −6, 0

B 4, 6

C −30, 20

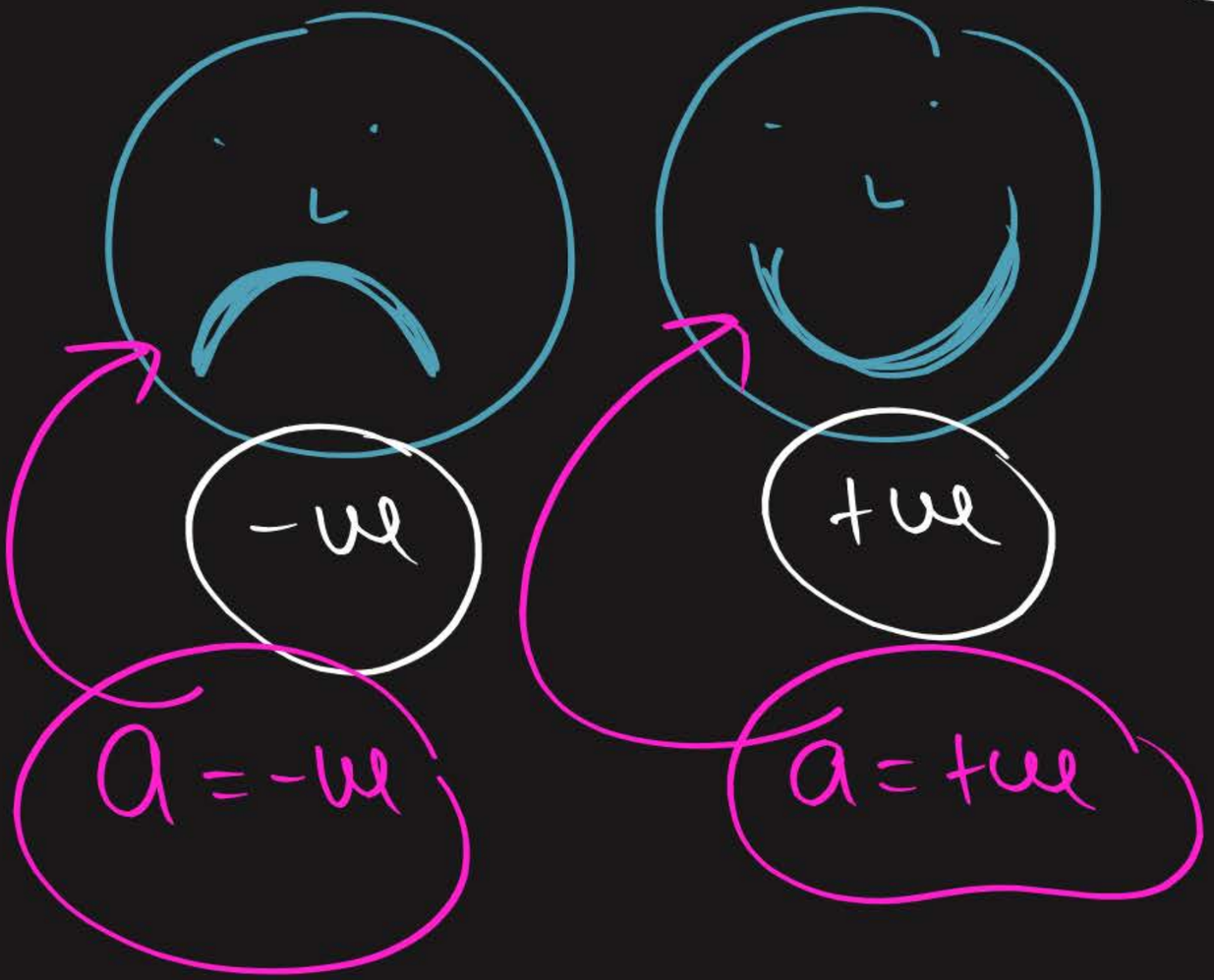
D −6, 6

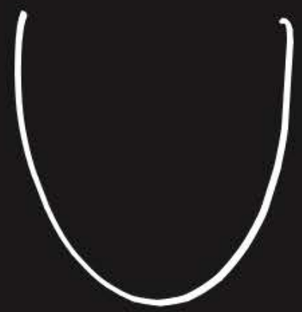


Concept

$y = ax^2 + bx + c$ → $a, b, c \in R$, $a \neq 0$

→ Parabola.



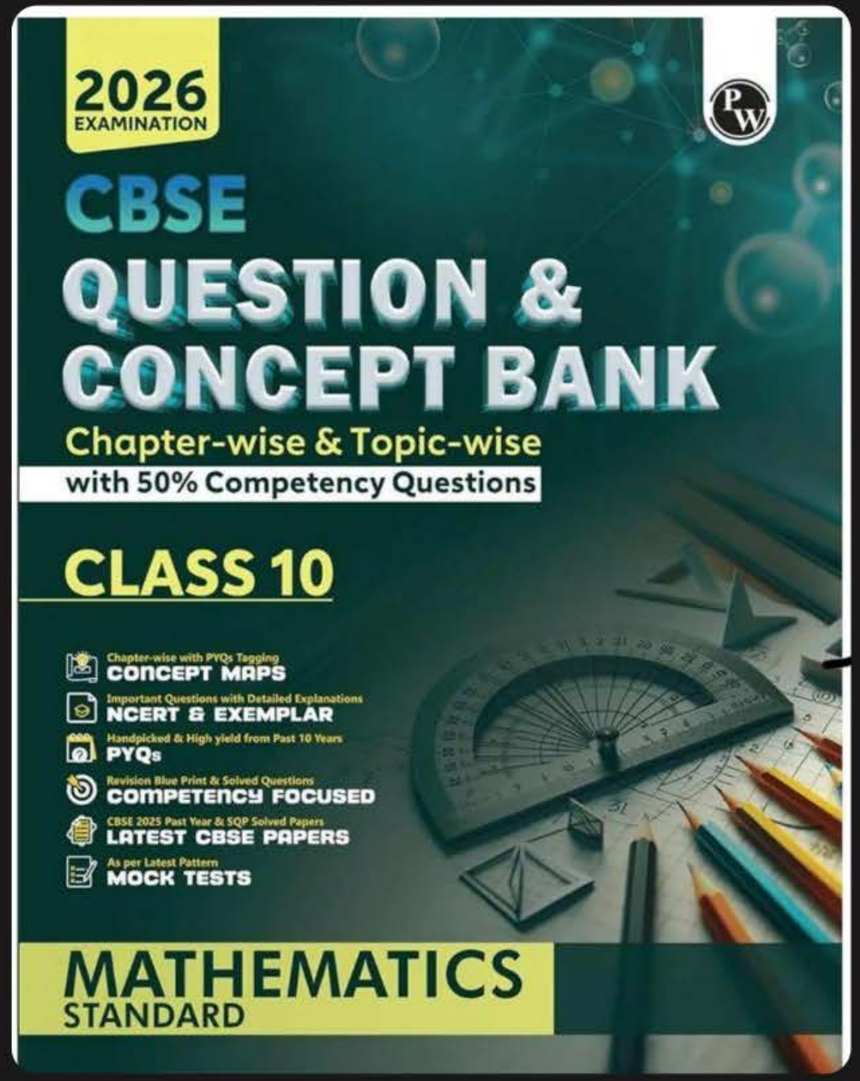


upward Parabola

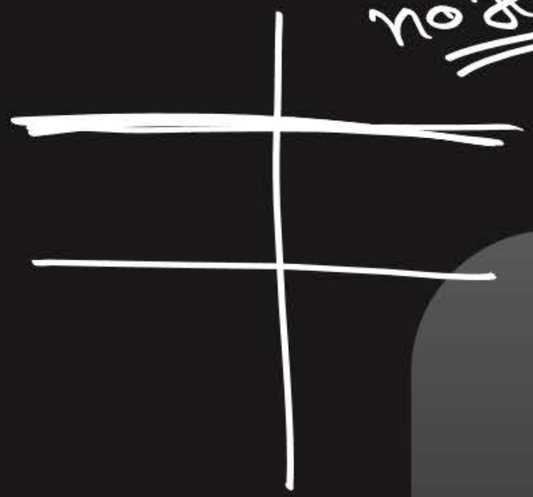
Q. $-3x^2 + 5x + 2$

$a = -3$
$b = 5$
$c = 2$

downward Parabola.


2026
EXAMINATION
CBSE
QUESTION &
CONCEPT BANK
Chapter-wise & Topic-wise
with 50% Competency Questions
CLASS 10
Chapter-wise with PYQs Tagging
CONCEPT MAPS
Important Questions with Detailed Explanations
NCERT & EXEMPLAR
Handpicked & High yield from Past 10 Years
PYQs
Revision Blue Print & Solved Questions
COMPETENCY FOCUSED
CBSE 2025 Past Year & SQP Solved Papers
LATEST CBSE PAPERS
As per Latest Pattern
MOCK TESTS
MATHEMATICS
STANDARD


WORK HARD
DREAM BIG
NEVER GIVE UP



Thank You