

EQUATION OF CURVE

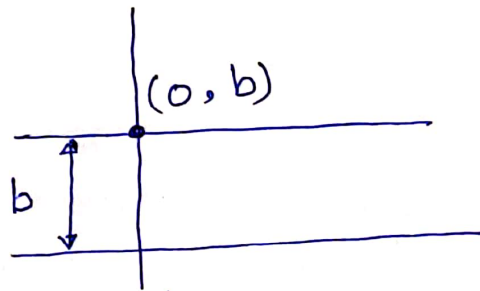
A collection of points which has length only, i.e. no width or thickness is known as a curve. A straight line is simplest possible curve. Circle, parabola, hyperbola, ellipse etc. are other examples.

In mathematics, a curve is identified by an equation. The equation representing a curve is known as equation of curve.

Equation of straight Line:\* Line Parallel to x-axis

A line parallel to x-axis is described as:

$$y = b$$

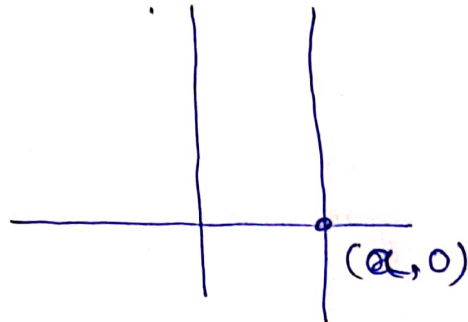


where  $b$  represents distance above (+ve) or below (-ve) the x-axis.

### \* Line Parallel to y-axis:

A line parallel to y-axis is represented as

$$\boxed{x = a}$$

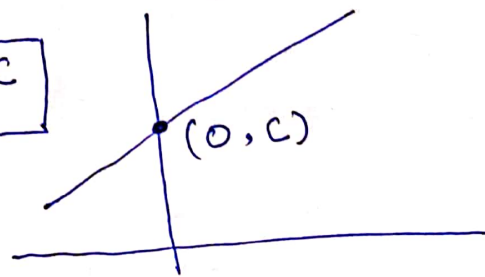


where  $a$  represents distance of the line right (+) or left (-ve) of the y-axis.

### \* Inclined Line:

An inclined straight line is represented as:

$$\boxed{y = mx + c}$$



where,  $m = \text{slope}$

$c = \text{intercept}$

= distance above/below x-axis it intersects y-axis.

### Assignment class #3

Find slope and intercepts of the following lines (Q.No. 1-4) and plot these lines:

Q.1  $y = 3x + 5$

Q.2  $x + y = 2$

Q.3  $4x - 3y = 12$

Q.4  $\frac{x}{3} + \frac{y}{4} = 1$

Q.5 Fahrenheit (F) and Celsius (C) temperature readings are related by a linear equation; that is, the graph of F vs. C is a straight line.

a) Find an equation that relates F and C, given that  $C = 0$  when  $F = 32$  and  $C = 100$  when  $F = 212$ .

Q.6. The steel in a railroad track expands when heated. The length  $l$  of a piece of rod is related to its temperature  $\theta$  by a linear equation. Find the relation using following table.

$l$	$\theta$
35ft	65°F
35.42ft	135°F

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