Calculus :-

Identifying functions :-

★ Linear function :-

A function of the form $f(x) = mx + b$ for constant m and b is called a linear function.

★ Linear function always show straight graph.

★ Power point :-

A function $f(x) = x^a$, where a is a constant is called power point.

★ Polynomial :

A function p is a polynomial if:

$$P(x) = a_n x^n + a_{n-1} x^{n-1} + \cdots a_1 x + a_0$$

where n is the non-negative integer and the number $a_0, a_1, a_2 \cdots a_n$ is a real consonants are called coefficient of polynomial.

* Rational function

The function in the form of

$$f(x) = \frac{P(x)}{q(x)}$$

is know as rational function.

* Exponential function :

$f(x) = a^x$ where the base $a > 0$ positive.

* Even, odd function

↦ even function = $f(-x) = f(x)$

odd function = $f(-x) = -f(x)$

for every x in the function's domain.

* The graph of even function is symmetric about the y-axis.

* The graph of odd function is symmetric about the origin.

Our first introduction to these fundion is unit circle.

⇒ The unit of circle is $\boxed{x^2 + y^2 = 1}$

★ Trignometric function :-
Sine cosine

⟹ * $\sin t = y$ * $\cos t = x$ * $\tan t = \frac{y}{x}$

* $\operatorname{cosec} t = \frac{1}{y}$ * $\sec t = \frac{1}{x}$ * $\cot t = \frac{x}{y}$

→ Tangent and secant are not defined at 0

$x = 0$

$t = \pi/2$

$\tan(\pi/2), \sec(\pi/2) = 0$

are undefined.

Find the values

$t = \pi/6$

* $\sin \frac{\pi}{6} = y = \frac{1}{2}$

* $\cos \frac{\pi}{6} = x = \frac{\sqrt{3}}{2}$

$\cos(x, y) = (\cos t + \sin t)$.

$t \neq 5\pi/4$

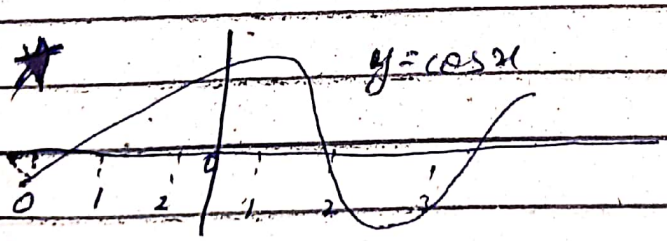
sin

* $t = \pi$ corresponds to the point $(x, y) = (-1, 0)$

$\sin \pi = y = 0$

$\cos \pi = x = -1$

The domain of the sin and cos function is the set of all real number.



Domain $-\infty < x < \infty$

Range $-1 \leq y \leq 1$

Period 2π

A function f is periodic when there exist a positive number which repeat there self again and again.

Even:

Cos / Secant

* Ex 1.4
* 1 - 4
* Q19 - 30

Exercise 1.6

Q 11 - 12