

# Economics

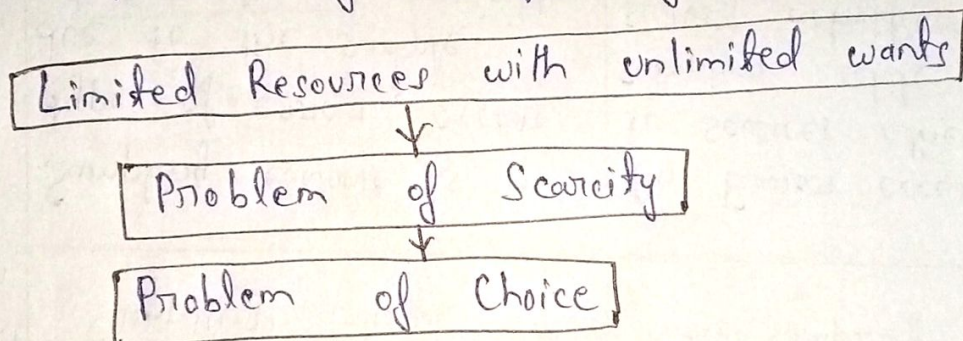
The word Economics has been derived from the Greek language → Oikonomos or Oikonomia  
house management

Economics is all about household management.

Now household can be referred to a particular region.

On a broader note, Economics is basically the management of a particular region that may be a city, village, town, district, state or country.

Evolution of Economics → Emergence of economics  
can be explained by the following flowchart —



Hence, the necessity was felt for the emergence of a separate stream called Economics to use the limited resources in the best possible way to fulfill the unlimited human needs.

Given to a broader perspective → Economics is the optimal utilisation of scarce resources to satisfy the boundless desires of mankind.

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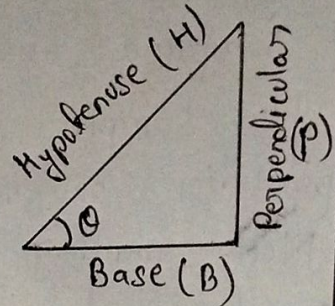
# Maths : Trigonometry

## Ratios in Trigonometry

$$\sin \theta = \frac{P}{H} = \frac{1}{\operatorname{cosec} \theta}$$

$$\cos \theta = \frac{B}{H} = \frac{1}{\operatorname{sec} \theta}$$

$$\tan \theta = \frac{P}{B} = \frac{1}{\operatorname{cote} \theta} = \frac{\sin \theta}{\cos \theta}$$



{ Applied in Right angled triangle }

### Basic Identities

- (i)  $\sin^2 \theta + \cos^2 \theta = 1$
- (ii)  $\sec^2 \theta = 1 + \tan^2 \theta$
- (iii)  $\operatorname{cosec}^2 \theta = 1 + \operatorname{cot}^2 \theta$

### Conversion of Ratios

$$\begin{aligned} \sin(90 - \theta) &= \cos \theta \\ \cos(90 - \theta) &= \sin \theta \\ \tan(90 - \theta) &= \operatorname{cote} \theta \\ \operatorname{cot}(90 - \theta) &= \tan \theta \\ \sec(90 - \theta) &= \operatorname{cosec} \theta \\ \operatorname{cosec}(90 - \theta) &= \sec \theta \end{aligned}$$

### Pythagoras Theorem

$$(\text{Hypotenuse})^2 = (\text{Perpendicular})^2 + (\text{Base})^2$$

### Table

Degree ( $\theta$ )	0	30°	45°	60°	90°	
sin $\theta$	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1	180° = $\pi$
cos $\theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0	360° = $2\pi$
tan $\theta$	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	$\infty$	90° = $\frac{\pi}{2}$
cot $\theta$	$\infty$	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0	45° = $\frac{\pi}{4}$
sec $\theta$	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	$\infty$	60° = $\frac{\pi}{3}$
cosec $\theta$	$\infty$	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1	30° = $\frac{\pi}{6}$
						270° = $\frac{3\pi}{2}$

# English

Language

Subject

Literature

Citizen of England

English is a simple language being a mode of communication to share your views, thoughts with others.

However, in India, it has been associated with social status and prestige.

But the reality is that we can't neglect the importance of English as a language in today's scenario.

Learning a language is a skill.

In order to be a fluent English speaker, we first need to learn the basics of English grammar.

Then we need to have a good stock of English vocabulary.

Last but not the least, we need to have a surrounding where we can communicate in that language.