

Amplitude



Preliminaries and Objectives

Preliminaries:

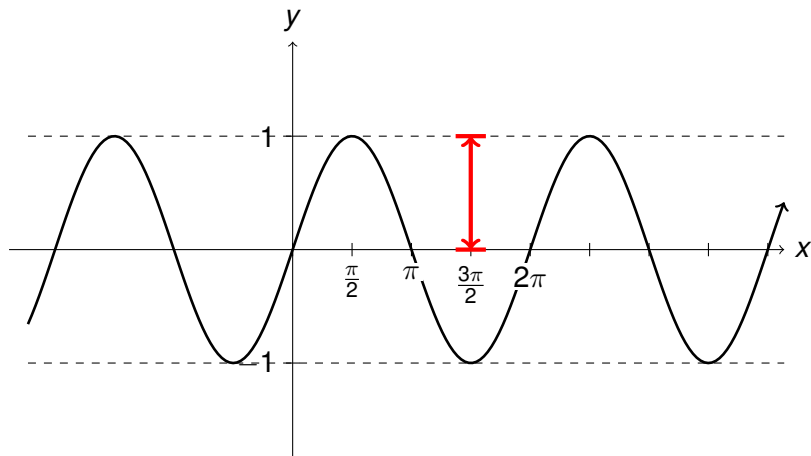
- The graph of $y = \sin x$ and $y = \cos x$
- Transformation of graphs (stretching / shifting / flipping)

Objectives:

- Definition of amplitude
- Find the amplitude of a wave given its graph
- Graph a wave given its amplitude

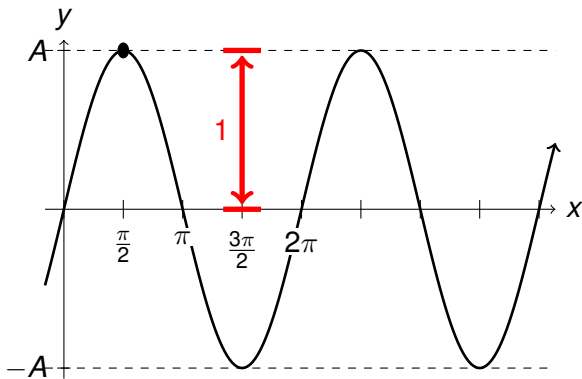
Basic Sine Wave

$$y = \sin x$$

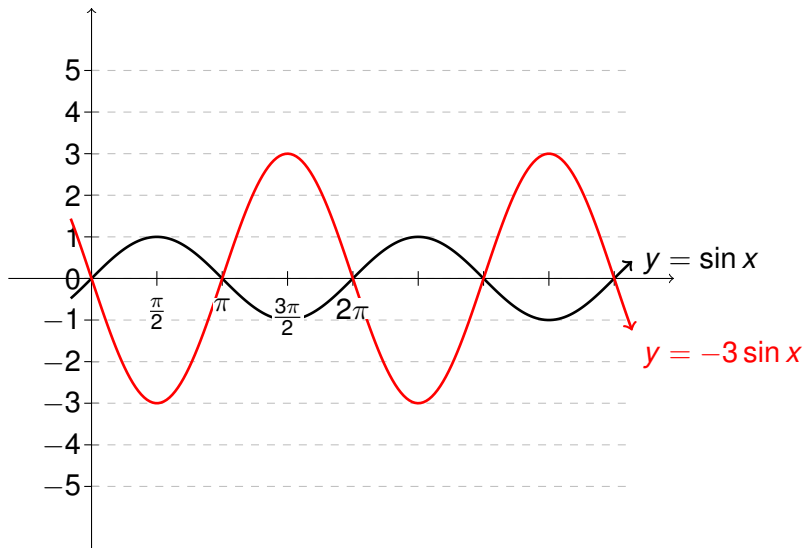


Definition of Amplitude

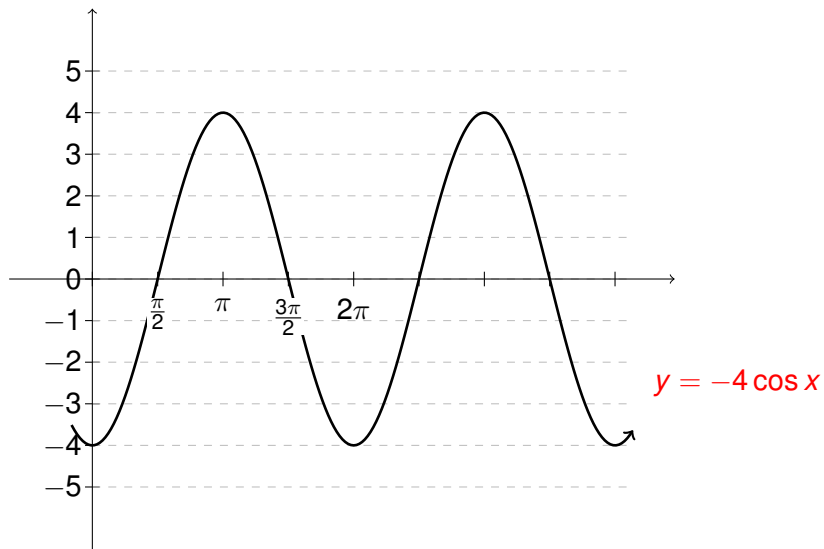
$$y = A \sin x$$



Equations and Graphs of Waves with Amplitude



Finding the Equations from the Graph



Recap

- $y = A \sin x$ middle-top-middle-bottom-middle
- $y = -A \sin x$ middle-bottom-middle-top-middle
- $y = A \cos x$ top-middle-bottom-middle-top
- $y = -A \cos x$ bottom-middle-top-middle-bottom
- Amplitude = A
- Peaks have a height of A , Valleys have a depth of $-A$