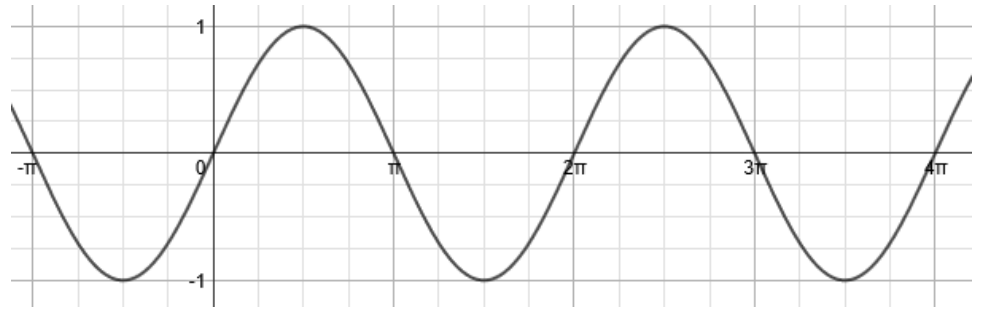


Math 3 Trigonometry, Graphing Guided Notes

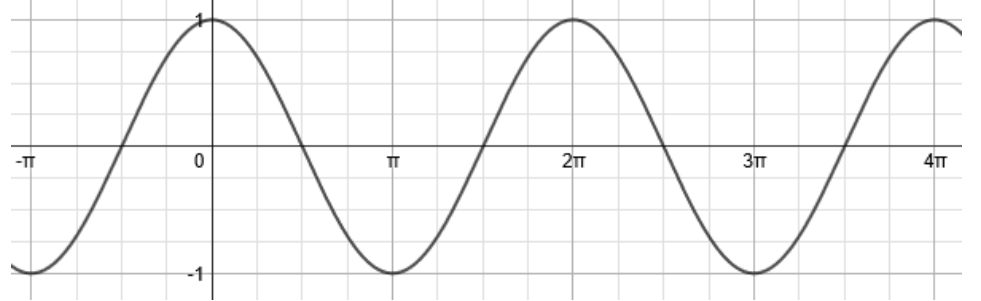
Sine, $y = \sin x$

| |
|-----------|
| Domain |
| Range |
| Period |
| Amplitude |
| Mid-Line |



Cosine, $y = \cos x$

| |
|-----------|
| Domain |
| Range |
| Period |
| Amplitude |
| Mid-Line |



Concept Summary Families of Sine and Cosine Functions

| Parent Function | Transformed Function |
|---|---------------------------|
| $y = \sin x$ | $y = a \sin b(x - h) + k$ |
| $y = \cos x$ | $y = a \cos b(x - h) + k$ |
| <ul style="list-style-type: none"> a = amplitude (vertical stretch or shrink) $\frac{2\pi}{b}$ = period (when x is in radians and $b > 0$) h = phase shift, or horizontal shift k = vertical shift | |

| | | | |
|--|---|--|---|
| | Domain: Range: Period: Amplitude: Equation: | | Domain: Range: Period: Amplitude: Equation: |
| | Domain: Range: Period: Amplitude: Equation: | | |
| | Domain: Range: Period: Amplitude: Equation: | | Domain: Range: Period: Amplitude: Equation: |

Math 3 Trigonometry, Graphing Guided Notes

Identify period and amplitude for each of the following functions.

1 $y = \sin \pi\theta$

2 $y = \sin 3\theta$

3 $y = -\sin \frac{\pi}{2}\theta$

4 $y = 2 \sin \pi\theta$

5 $y = 4 \sin \frac{1}{2}\theta$

6 $y = -4 \sin \frac{1}{2}\theta$

7 $y = \cos 2\theta$

8 $y = -3 \cos \theta$

9 $y = -\cos 3t$

10 $y = \cos \frac{\pi}{2}\theta$

11 $y = -\cos \pi\theta$

Write a **sine** function with the amplitude and period indicated.

1 amplitude 2, period $\frac{2\pi}{3}$

2 amplitude $\frac{1}{3}$, period π

3 amplitude 4, period 4π

Write a **cosine** function with the amplitude and period indicated.

4 amplitude 3, period 2π

5 amplitude 1, period 2

6 amplitude 1.5, period 3