

Trig Graph Characteristics - Amplitude & Period

Date _____ Period _____

Find the amplitude of each function.

$$y = \boxed{A} \sin \theta$$

↓
Amp.

$$y = \boxed{A} \cos \theta$$

↓
Amp.

$$y = \cancel{A} \tan \theta$$

↳ no amp

1) $y = 8 \sin \frac{\theta}{5} \Rightarrow y = 8 \cdot \sin(\frac{1}{5}\theta)$

$$\boxed{\text{Amp} = 8}$$

2) $y = 5 \tan(6\theta)$

$$\boxed{\text{Amp} = \text{None}}$$

3) $y = \cos(5\theta)$

$$\boxed{\text{Amp} = 1}$$

4) $y = 6 \sin 5\theta$

5) $y = 5 \cos 6\theta$

6) $y = \frac{1}{8} \cdot \cos 5\theta$

7) $y = 3 \tan 4\theta$

8) $y = \frac{1}{5} \cdot \sin 4\theta$

Find the period of each function in degrees and radians.

cosine: 360° or 2π

$$\Rightarrow y = a \sin(B\theta)$$

$$\text{Period} = \frac{360^\circ}{B} \text{ or } \frac{2\pi}{B} \Rightarrow \begin{matrix} \sin \\ \& \cos \end{matrix}$$

sine: 360° or 2π

$$\text{tan: } 180^\circ \text{ or } \pi \Rightarrow \frac{180^\circ}{B} \text{ or } \frac{\pi}{B}$$

$$9) y = 5 \tan(8\theta)$$

A B → period
Amp: None

$$\frac{180^\circ}{8} = \boxed{22.5^\circ} \text{ or } \boxed{\frac{\pi}{8}}$$

$$10) y = 5 \sin 5\theta$$

A B
Amp: 5

$$\frac{360^\circ}{5} = \boxed{72^\circ} \text{ or } \boxed{\frac{2\pi}{5}}$$

$$11) y = 10\cos 6\theta$$

$$12) y = 2\sin \frac{\theta}{6} \Rightarrow y = 2\sin\left(\frac{1}{6}\theta\right)$$

$$\text{Amp: } 2$$

$$\frac{360^\circ}{1/6} = 360 \cdot \frac{6}{1} = \boxed{2160^\circ}$$

$$\frac{2\pi}{1/6} = 2\pi \cdot \frac{6}{1} = \boxed{12\pi}$$

Find the period of each function in degrees and radians.

$$13) y = \frac{1}{10} \cdot \sin \frac{\theta}{4}$$

$$14) y = 10\tan 2\theta$$

$$15) y = 5\sin 5\theta$$

$$16) y = 6\cos \theta$$

Find the amplitude and period of each function in degrees and radians.

$$17) y = \frac{1}{9} \cdot \cos 3\theta$$

$$18) y = \tan 6\theta$$

Find the amplitude and period in degrees and radians of each function.

$$19) y = 5\cos \frac{\theta}{7}$$

$$20) y = 9\tan 7\theta$$

Answers to Trig Graph Characteristics - Amplitude & Period (ID: 1)

1) 8

5) 5

9) $\frac{45^\circ}{2}$

13) 8π

17) Amplitude: $\frac{1}{9}$

Period: 120°

2) None

6) $\frac{1}{8}$

10) 72°

14) $\frac{\pi}{2}$

18) Amplitude: None
Period: 30°

3) 1

7) None

11) 60°

15) $\frac{2\pi}{5}$

19) Amplitude: 5
Period: 14π

4) 6

8) $\frac{1}{5}$

12) 2160°

16) 2π

20) Amplitude: None
Period: $\frac{\pi}{7}$