

NAME: _____

1. Describe the amplitude of a periodic function.
2. Sketch the graph of two functions on the same axes. Both functions should be periodic and have the same amplitude but different periods.
3. Describe how the graph of $y = \sin x$ is different from the graph $y = -\sin x$.
4. Write two different sine functions that have the same period, π , but different amplitudes.

Answers may vary. Sample: The amplitude of a periodic function is half the difference between the maximum and minimum values of the function.

[2] Check students' graphs.

Answers may vary. Sample: They have the same period and amplitude, but they are reflections of each other over the x -axis.

[4] Answers may vary. Sample: $y = 3 \sin 2x$ and $y = 4 \sin 2x$

[5] $y = \cos \frac{\pi t}{5}$

Answers may vary. Sample: The sine and tangent functions are both periodic functions. However, the period of the sine function is 2π while the period of the tangent function is π . The sine function has amplitude, but the tangent function does not since it approaches ∞ and $-\infty$ during each period. The sine function is continuous while the tangent function has vertical asymptotes.

[7] Answers may vary. Sample: $y = \tan \frac{x}{2}$
