Trigonometry Journal: Trigonometric Graphs
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NAME:_____

P.I. A2.A.70: Sketch and recognize one cycle of a function of the form y=AsinBx or y=AcosBx

P.I. A2.A.71: Sketch and recognize the graphs of the functions y=sec(x), y=csc(x), y=tax(x), and y=cot(x)

1. Describe how the graph of $y = \sin x$ is different from the graph $y = -\sin x$.

2. Write two different sine functions that have the same period, π, but different amplitudes.

3. Waves 2 feet high are occurring every 10 seconds at the shore. Write a cosine function to model the height of a water particle above and below the mean water line.

4. Compare and contrast the sine and tangent functions. How are they similar? How are they different?

5. Write a tangent function that has a period of 2π.

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

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

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

[4] 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.

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