## **3.4 Sine and Cosine Function Graphs**

## AP Precalculus

Name:

CA #2

- 1. We are given an angle θ, in standard position as shown in the figure. The function g is given by g(a) = sin a. For the angle α (not shown), θ < α < 2π. Which of the following is true?</li>
  (A) g(α) < g(θ)</li>
  (B) g(α) > g(θ)
  (C) g(α) = g(θ)
  - (D) Depending on the value of  $\alpha$ , sometimes  $g(\alpha) < g(\theta)$  and sometimes  $g(\alpha) > g(\theta)$ .
- We are given an angle θ, in standard position as shown in the figure. The function g is given by g(a) = cos a. For the angle α (not shown), θ < α < π. Which of the following is true?</li>
  - (A)  $g(\alpha) < g(\theta)$  (B)  $g(\alpha) > g(\theta)$  (C)  $g(\alpha) = g(\theta)$
  - (D) Depending on the value of  $\alpha$ , sometimes  $g(\alpha) < g(\theta)$  and sometimes  $g(\alpha) > g(\theta)$ .

The function f is given by  $f(\theta) = \cos \theta$ . Describe the concavity of f on the interval, and if f is increasing or decreasing on the interval.

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3. $0 < \theta < \frac{\pi}{2}$	4. $\frac{\pi}{2} < \theta < \pi$	5. $\frac{3\pi}{2} < \theta < 2\pi$
The function $f$ is given by $f(\theta) = s$	$\sin \theta$ . Describe the concavity of $f$ on	the interval, and if f is

The function f is given by  $f(\theta) = \sin \theta$ . Describe the concavity of f on the interval, and if f is increasing or decreasing on the interval.

$6.  \frac{\pi}{2} < \theta < \pi$	7. $\pi < \theta < \frac{3\pi}{2}$	8. $\frac{3\pi}{2} < \theta < 2\pi$

8. Concave up	7. Concave up	6. Concave down	<ol> <li>Concave down</li> <li>Increasing</li> </ol>
Increasing	Decreasing	Decreasing	
4. Concave up Decreasing	<ol> <li>Concave down</li> <li>Decreasing</li> </ol>	7. Y	I. B

