

The graph of cosine has one hill and one valley on the interval  $\left[-\frac{\pi}{2}, \frac{3\pi}{2}\right]$ . The hill covers the interval from  $\theta = -\frac{\pi}{2}$  to  $\theta = \frac{\pi}{2}$ . The highest point is in the middle of the hill:  $(0, 1)$ . The valley covers the interval from  $\theta = \frac{\pi}{2}$  to  $\theta = \frac{3\pi}{2}$ . The lowest point is in the middle of the valley:  $(\pi, -1)$ .