

**The Tangent Function and Periodicity** – in book: Section 4.6 p. 252

1. Describe the values of  $\theta$  between 0 and  $2\pi$  which satisfy  $0 \leq \tan \theta \leq 1$ .
2. Describe the values of  $\theta$  between 0 and  $2\pi$  with  $\tan \theta < 0$  and  $\cos \theta < 0$ .

Use the periodicity theorem to evaluate.

3.  $\tan 2850^\circ$
4.  $\sin 2070^\circ$
5.  $\cos 495^\circ$

Use the periodicity theorem and the fact that  $\tan \frac{4\pi}{7} \approx -4.381$  to evaluate.

6.  $\tan \frac{11\pi}{7}$
7.  $\tan -\frac{4\pi}{7}$
8.  $\tan \frac{24\pi}{7}$

9. Consider  $h(\theta) = \tan \theta$ .

- a) Sketch a graph.
- b) Label the y-intercept and zeros.
- c) Identify the period:
- d) Give the domain:
- e) Give the range:
- f) Tell whether the function is odd, even, or neither.

