

1. This is an open notes and open book quiz. You may also use resources available on ELC or the class website, as well as a calculator (although a calculator should not be necessary).
  2. You may not use any other resources and may not consult with any person other than the course instructor.
  3. **All answers should be exact**, i.e. no numerical approximations unless otherwise specified.
  4. You are graded on your solution, but **more importantly you also graded on your supporting arguments and work you use to justify your answers.**
  5. **Please submit your completed quiz on Gradescope by Friday, 16 April 2021.**
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By providing my signature below I acknowledge that I abide by the University's academic honesty policy.  
This is my work, and I did not get any help from anyone else:

Name (sign): \_\_\_\_\_

Name (print): \_\_\_\_\_

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1. (10 points) Suppose  $\theta_R = 7\pi/6$  is measured in radians, which has a corresponding point  $\vec{p}$  on the unit circle. Draw a detailed diagram of this situation.

1. Determine the  $(x, y)$  coordinate of  $\vec{p}$ .
2. Determine the precise value of  $\cot(\theta_R)$ .

*Note: an accurate picture/diagram is worth points here!*

2. (10 points) Suppose  $\sin(\theta_R) = 7/25$ , and determine the exact value of  $\tan(\theta_R)$ .

*Note: an accurate picture/diagram is worth points here!*

3. (10 points) Consider the following function:

$$\begin{aligned}\Psi : \mathbb{R} &\rightarrow \mathbb{R} \\ t &\mapsto \cos\left(t - \frac{\pi}{4}\right) + 1\end{aligned}$$

Accurately sketch any two periods of the graph of  $\Psi$  below, and determine the numerical values of the following parameters:

1. The amplitude  $A$ ,
2. The phase shift  $\phi$ ,
3. The period  $P$ , and
4. The vertical shift  $\delta$ .

