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, 9 APril 2021.**

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:

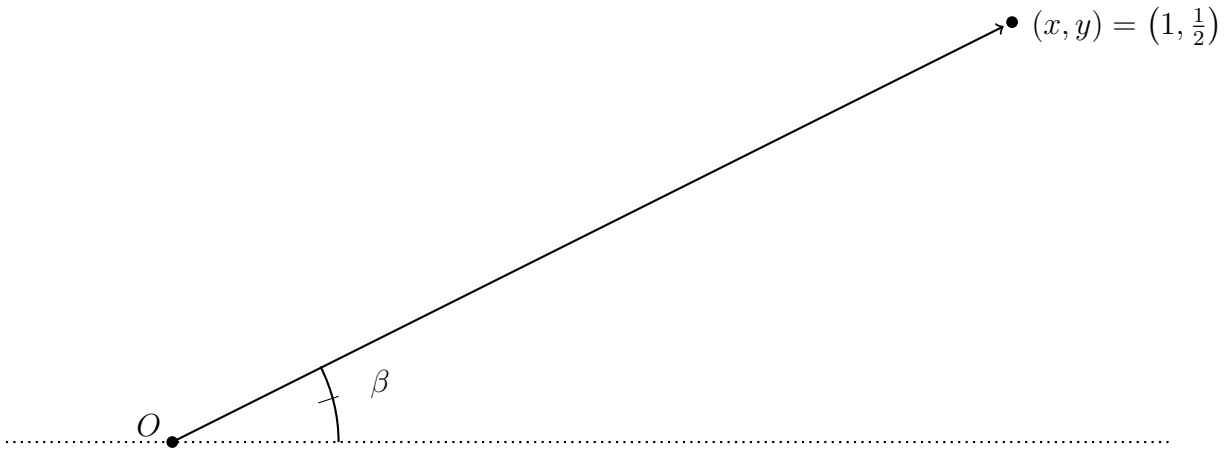
Name (sign): _____ Name (print): _____

---

1. (10 points) Suppose a vector $\vec{p}$ has length $r = 1$ and angle $\theta = \pi/4$ in radians and points at a point $\vec{p}$ in the Cartesian plane. Draw a detailed diagram of this situation and find the corresponding (x, y) coordinates of the point $\vec{p}$.

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

2. (10 points) In the diagram below, draw a coordinate system with the directions $\hat{x}, \hat{y}$ clearly labeled. Then draw an appropriate triangle (with all side lengths labeled) and reason from it to determine the values of $\sin(\beta)$, $\cos(\beta)$, and $\tan(\beta)$,



3. (10 points) Use the **flipping method** from class to determine the (x, y) coordinates of the point $\vec{p}$ on the unit circle corresponding to a vector $\vec{v}$ with length $r = 1$ at an angle of $\theta = 7\pi/6$ radians.

   Hint: use the following diagram. Importantly, a correct answer from others methods will only yield partial credit.