## Quiz 12

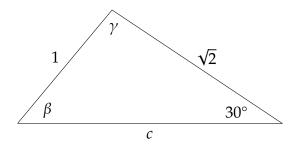
Due: 21 November 2024

Answer the questions in the spaces provided. Show all of your work and circle the answer you would like to have graded for each question.

1. The Reitz Union is 2,400 feet from Little Hall, Norman Hall is 3,000 feet from the Reitz Union, and Little Hall is 1,000 feet from Norman Hall. Draw a triangle connecting these buildings and calculate the **smallest** angle in your triangle. (You may leave your answer in the form of an inverse trigonometric function.)

2. Two boats leave the same port at the same time. One sails 30 miles per hour at a bearing of N20°W while the other sails 40 miles per hour at a bearing of S30°W. How far apart are these two boats after 2 hours?

3. Determine  $\beta$ ,  $\gamma$ , and c in the triangle below. Assume that  $\beta$  is **acute**. (Not to scale.)



4. You and a friend are watching a bird flying directly overhead. When the bird is to the right of you and your friend, you measure the angle of elevation to the bird to be 84° while your friend measures the angle of elevation to the bird to be 86°. If you and your friend are standing 10 feet apart, what is the altitude of the bird in feet?