Name _____ Date _____

MAT 1275 – Mr. Kan   Reference Angles

Watch this video on coterminal angles and reference angles:
https://youtu.be/JtAxPZxJfU4?si=R_hxpaOEM3FepttR

<u>Initial Side</u>: A straight line that indicates the beginning of an angle. This is always located on the positive portion of the x-axis.

<u>Terminal Side</u>: A straight line that has been rotated and indicates the end of an angle. This can end up in an one of the quadrants of the xy-axis.

<u>Examples</u>:

Terminal Side   Initial Side

Initial Side

Terminal Side
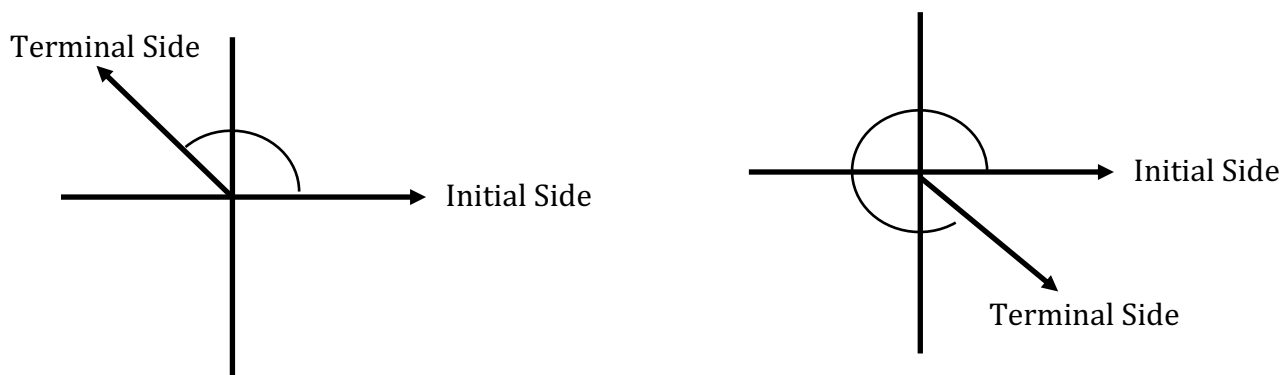
Use this website to assist you with this project: https://www.mathopenref.com/reference-angle.html

1) Follow the directions. The initial side of the angle is drawn for you already.

   a. On the axis to the right, draw a 60° angle starting from the positive x-axis.
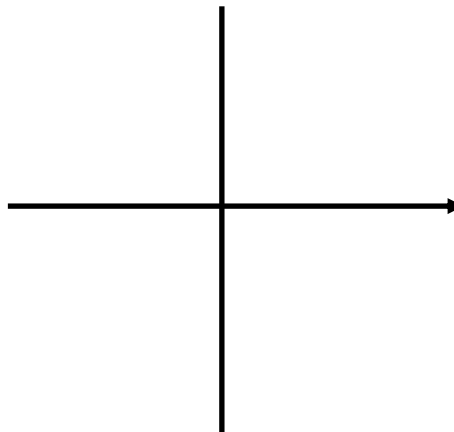
   b. What is the measure of the acute angle (between 0 and 90°) between the terminal side and the x-axis?

   c. Refer to the diagram on page 3. Which quadrant is the terminal side of the angle in?

2) Follow the directions. The initial side of the angle is
   drawn for you already.
      a. On the axis to the right, draw a 150° angle
         starting from the positive x-axis.
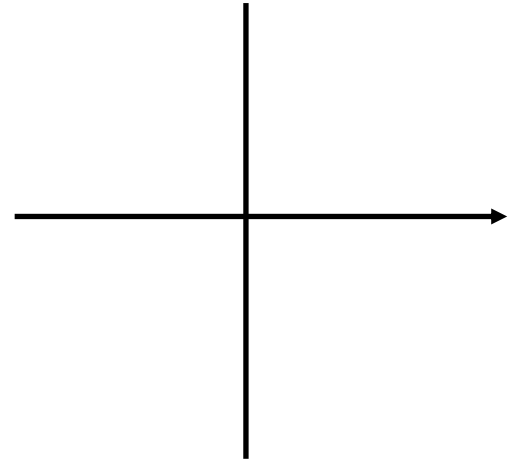
      b. What is the measure of the acute angle (between 0 and 90°) between the terminal
         side and the x-axis?

      c. Refer to the diagram on page 3. Which quadrant is the terminal side of the angle in?

3) Follow the directions. The initial side of the angle is drawn for you already.
      a. On the axis to the right, draw a 225° angle
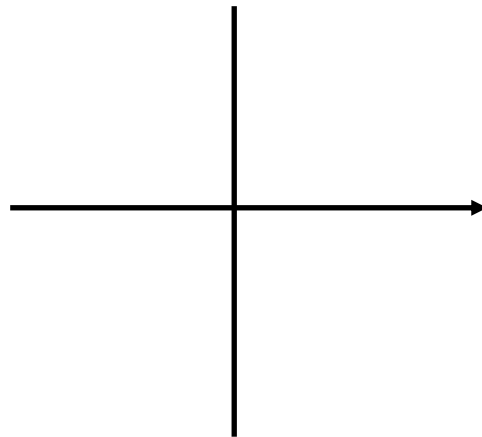   starting from the positive x-axis.

      b. What is the measure of the acute angle (between 0 and 90°) between the terminal
         side and the x-axis?

      c. Refer to the diagram on page 3. Which quadrant is the terminal side of the angle in?

4) Follow the directions. The initial side of the angle is drawn for you already.
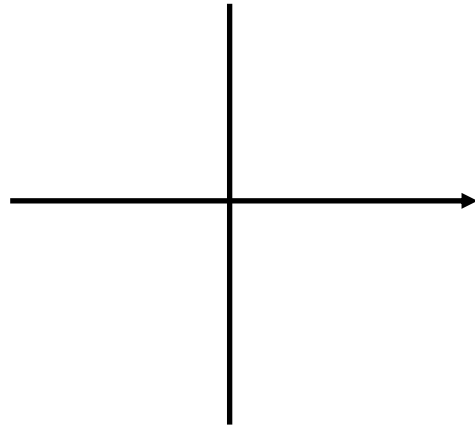   a. On the axis to the right, draw a 300° angle starting from the positive x-axis.

   b. What is the measure of the acute angle (between 0 and 90°) between the terminal side and the x-axis?

   c. Refer to the diagram on page 3. Which quadrant is the terminal side of the angle in?

90°

II Quadrant   I Quadrant

Sin θ and Csc θ All are positive

are positive   (A)

(S)

180° —————————————————————— 0°

III Quadrant   IV Quadrant

Tan θ and Cot θ Cos θ and Sec θ

are positive   are positive

(T)   (C)

270°