**INVESTIGATE:**

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| **Step 1**: Determine all the exact values of the sides for the right triangle that point A forms on the circle.  **Step** **2**: Determine the principal angle, related acute angle and the three primary trig ratios for the principle angle.  **Step 3**: Reflect point A horizontally about the y - axis and form a right triangle. Label the point S.  **Step 4**: Determine the principal, related acute angle and the three primary trig ratios for the principle angle using calculator. **Step 5**: Reflect point S vertically about the x - axis and form a right triangle. Label the point T.  **Step 6**: Determine the principal, related acute angle and the three primary trig ratios for the principle angle using calculator.  **Step 7**: Reflect point T horizontally about the y - axis and form a right triangle. Label the point C.  **Step 8**: Determine the principal, related acute angle the three primary trig ratios for the principle angle using calculator. |

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| --- | --- | --- | --- | --- | --- |
| **Angles** | **Quadrant** | **Sine Ratio** | **Cosine Ratio** | **Tangent Ratio** | **GRAPH** |
| **POINT A**  **principal**  **\_\_\_\_\_\_\_\_**  **related acute**  **\_\_\_\_** |  |  |  |  |  |
| **POINT S**  **principal**  **\_\_\_\_\_\_\_\_**  **related acute**  **\_\_\_\_\_** |  |  |  |  |
| **POINT T**  **principal**  **\_\_\_\_\_\_\_\_**  **related acute**  **\_\_\_\_\_** |  |  |  |  |
| **POINT C**  **principal**  **\_\_\_\_\_\_\_\_**  **related acute**  **\_\_\_\_\_** |  |  |  |  |

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**PRACTICE:**

HINT: Determine in which quadrants the given ratio could have the same sign.

Given angle , where, determine two possible values of where each ratio would be true. Sketch both principal angles.

a) b)

c) d)

e) f)

g) h)

i)