**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$ θ$ , where$ 0°\leq θ\leq 360°$, determine two possible values of $θ$ where each ratio would be true. Sketch both principal angles.

a) $sinθ=0.4226$ b) $cosθ=-0.3420$

c) $cotθ=8.1516$ d) $cscθ=-2.3424$

e) $sinθ=0.4815$ f)$ tanθ=-0.1623$

g) $cosθ=-0.8722$ h) $sinθ=-0.3154$

i) $cosθ=0.6951$