Name:

Date:

School:

Facilitator:

7.07 Trigonometric Ratios (37 points)

1. Find the values of the following in simplest fraction form then divide to represent in decimal form.

AB = 13, AC = 12, BC = 5

|  |  |
| --- | --- |
| **Fraction form** | **Decimal form** |
| Sin A = |       | Sin A = |       |
|       |
|  |  |  |  |
| Cos A = |       | Cos A = |       |
|       |
|  |  |  |  |
| Tan A = |       | Tan A = |       |
|       |

2. Use the Online Trigonometric Table of Values linked on the task page to find the following:

Sin 10o =

Tan 45o =

Cos 80 o =

3. Use a scientific calculator to find the following values. (There is one linked on the task page.)

Sin 80 o =

Cos 45o =

Tan 77o =

4. Open the GeoGebra activity linked on the task page. Use the interactive to answer the following questions.

* How does the value of sinA change as $∠A $increases and decreases?
* How does the value of cosA change as $∠A $increases and decreases?
* What happens to the value of tanA as you increase $∠A$?
* How do the reciprocal values change compared to the other functions?
* Which values are always less than 1?
* When are sine and cosine equal?

5. Identify the relationship between the sine and cosine of complementary angles.

Using the Online Trigonometric Table of Values or the GeoGebra activity linked on the task page, you can start by stating the sine and cosine for the complementary angles 40° and 50°

* sin 40° =       cos 40° =
sin 50° =       cos 50° =

Think of two complementary angles and list the sine and cosine for each.

Complementary angles      ° and      °

* sin      ° =       cos      ° =
sin      ° =       cos      ° =
* How does the value of sine and cosine of complementary angles relate?
* Explain in your words why this relationship of sine and cosine holds for complementary angles.