Graphs of Reciprocal Trigonometric Functions

The reciprocal trigonometric functions are defined as



**Sketching**

**1.** You can base the sketch of the graph on the graph of .



First sketch one cycle of , using the 5 point method (see back of sheet).



# Fill in the blanks in observations A – G and use your observations to sketch one cycle of the graph of . Check your graph using a graphing calculator.



**A.** For . Thus, =



**B.** For . Thus, =



1. For is positive and increases in value. Thus, is



\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in value.

1. For is positive and \_\_\_\_\_\_\_\_\_\_\_\_\_ in value. Thus,



is \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in value.

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and there will be a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at .



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\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in value.

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Thus, is \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in value.



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1. Whenever , is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and there will be



a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. For the function , state the following:



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c) the values for which y = 1 c) the values for which y = -1

1. a) What is the amplitude of ?



b) What is the amplitude of , if any?



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**1.** You can base the sketch of the graph  on the graph of .



First sketch one cycle of , using the 5 point method (see back of sheet).



# Fill in the blanks in observations A – G and use your observations to sketch one cycle of the graph of. Check your graph using a graphing calculator.

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1. Whenever , is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and there will be



a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. For the function , state the following:



a) the domain b) the range

c) the values for which y = 1 c) the values for which y = -1

1. a) What is the amplitude of ?

b) What is the amplitude of , if any?

**Sketching**



**1.** You can base the sketch of the graph  on the graph of .

First sketch one cycle of  (see back of sheet).

# Fill in the blanks in observations A – F and use your observations to sketch one cycle of the graph of. Check your graph using a graphing calculator.

1. Wherever  will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and there will be

a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Wherever  is undefined, 
2. For  is positive and increases in value. Thus,  is

\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in value.

1. For  is negative and \_\_\_\_\_\_\_\_\_\_\_\_\_ in value. Thus, 

is \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in value.

1. For  is positive and \_\_\_\_\_\_\_\_\_\_\_\_\_ in value. Thus, 

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