Math 3200 - Chapter 5 Unit Test Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total Marks - 37 Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Part A - ***PLEASE PUT YOUR ANSWERS ON THE LINES PROVIDED ON THE 3RD PAGE*** (15 marks)

1. The graph of will display a phase shift of \_\_ when compared to the graph of .

A) units right B) units left

C) units right D) units left

2. Which graph represents ?



A) B)



C) D)

3. What is NOT in the domain of ?

A)  B) 

C)  D) 

4. For what values of x does equal 0?

A)  B) 

C)  D) 

5. What are the period and amplitude of ?

A)  B) 4 and -5

C) 4 and 5 D) 

6. What mapping rule describes the transformations that have occurred to given the new function ?

A)  B) 

C)  D) 

7. What is the sinusoidal axis for ?

A)  B) 

C)  D) 

8. What is the range for the function ?

A)  B) 

C)  D) 

9. What are the asymptotes for the function ?

A)  B) 

C)  D) 



10. Use the graph of provided to find the general solutions for the function .

A)  B) 

C)  D) 

11. Solve for x for 

A)  B) 

C)  D) 

12. Which function below has a period of 4?

A)  B) 

C)  D) 

13. The equation  describes the fox population on the Island of Newfoundland over a 10 year time period. represents the population at time t in years. What is the population in year 7?

A) approximately 1482 B) approximately 1092

C) approximately 1015 D) approximately 1500

14. What is the y-intercept of the graph of the function ?

A) -1 B) 0

C) 1 D) 

15.What transformations have occurred to to result in the graph of ?

A) vs of 7, ht of , and a vt of -5 B) vs of 7, ht of , and a vt of 5

C) vs of -7, ht of , and a vt of -5 D) vs of 7, ht of , and a vt of 5

ANSWERS FOR MULTIPLE CHOICE QUESTIONS

1. \_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_ 7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 10. \_\_\_\_\_\_\_\_\_\_\_\_\_ 13.\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_ 5. \_\_\_\_\_\_\_\_\_\_\_\_\_ 8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 11. \_\_\_\_\_\_\_\_\_\_\_\_\_ 14. \_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_ 6. \_\_\_\_\_\_\_\_\_\_\_\_\_ 9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 12. \_\_\_\_\_\_\_\_\_\_\_\_\_ 15. \_\_\_\_\_\_\_\_

Part B - Answer all of the following questions in the spaces provided. (22 marks)

16. Solve for x for . Round your solutions to the nearest hundredth. Be sure to state all of the solutions on this interval. ( 6 mks)





17. Sketch the graph of the function . Use radian measure on your horizontal axis, clearly indicating the scale you are using on both axes. You must show 2 periods of the function. State the domain and the range for this function. (6 mks)

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18. Find the equation of the sinusoidal function that has a minimum at and it's nearest maximum point is . The grid below should help you visualize this function. Please use cosine in your solution. (4 mks)

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19. The London Eye has a diameter of 122 m and a maximum height of 135 m from the ground. It takes approximately 30 minutes for one rotation of the ferris wheel. Passengers board at the bottom of the ride. The ride moves slowly so that it is usually not necessary for the wheel to stop to let passengers on or off.

Write a sinusoidal function that represents the height of a passenger riding the London Eye. Be sure to show the ht of the passenger over time on the graph below. You will have to indicate appropriate numbers on both axes. You must use cosine in your answer. (4 mks)



Find the height of the passenger, using your function, 42 minutes after the ride began (assuming he or she stayed on that long) (2 mks)