Math 4 Honors Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 4 Test Review Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Unit 4 Vocabulary**

***Across***

3. The period of the tangent function is \_\_\_\_\_\_\_\_ radians.

8. Complex numbers *z* &  are \_\_\_\_\_\_\_ of each other.

10. If *f*(*-x*) *= f*(*x*), then *f* is a(n) \_\_\_\_\_\_\_ function.

11. 6 + 10*i* is a complex number written in \_\_\_\_\_\_\_ form.

14. \_\_\_\_\_\_\_ is the reciprocal of tangent.

16. The complex number -3 − 8*i* lies in the \_\_\_\_\_\_\_\_ quadrant.

18. When converting a complex number in rectangular form to polar form, you must make sure the

 argument, , is in the correct \_\_\_\_\_\_\_.

***Down***

1. In the complex plane, the vertical axis is the \_\_\_\_\_\_\_ axis.

2. \_\_\_\_\_\_\_ is the reciprocal of sine.

3. DeMoivre's Theorem enables us to calculate \_\_\_\_\_\_\_ of complex numbers.

4. The number 10(cos 150 + *i*sin 150) is written in \_\_\_\_\_\_\_ form.

5. cos (2)= 2cos2 − 1 is a(n) \_\_\_\_\_\_\_ angle formula.

6. In the complex plane, the horizontal axis is the \_\_\_\_\_\_\_ axis.

7. sin2 + cos2 = 1 is a(n) \_\_\_\_\_\_\_ identity.

9. The absolute value of a complex number is also called the \_\_\_\_\_\_\_.

12. \_\_\_\_\_\_\_ is the reciprocal of cosine.

13. An equation that is true for all values of the variable (as defined by the domain).

15. If *f*(*-x*) *= -f*(*x*), then *f* is a(n) \_\_\_\_\_\_\_ function.

17. To calculate the argument of a complex number, you must take the inverse \_\_\_\_\_\_\_ of *b/a*.

19. When multiplying two complex numbers in trig. form, you multiply the moduli and \_\_\_\_\_\_\_ the

 arguments.

 OVER 🡪

1. Let .

Unit 4 Test Info:

1. You will be able to use your calculator.
2. You will be given a formula sheet that has the Pythagorean, Sum & Difference and Double Angle Identities. It will also have the Complex *n*th Roots Theoremformula.
3. You must have the Unit Circle and all other formulas memorized.
4. Write *z* in **rectangular** form.
5. Find |*z*|.
6. Write *z* in **polar** form. Keep *θ* in degrees.

2. Express [4, 315°] in *exact* **standard** form.

3. Find all fourth roots of . Write your answers in polar form. Keep *θ* in degrees.

 Graph the![[image]]() results below. *Imaginary*

 15°

 -3 -2-1 1 2 3 *Real*

 What type of figure is created by connecting the four roots?

4. Evaluate each.  Write your exact answers in the form they started in.

 a.  b.

c.  and 



5.

 **vi.** sin (2θ) = \_\_\_\_\_\_\_\_\_\_

 **b.** Identify a possible approximate positive degree measure for θ. Show your work.

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**Verify the identities.**

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6. 7. 

**Solve for primary values. Find all exact complex solutions.**

 **(Write your answers in standard form.)**

8.  9. *x*3 = -8*i*

**Solve the following problem. Round your answers to the nearest 100th. (degree mode)**

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10.





1. b.

 SHOW YOUR WORK. SHOW YOUR WORK.