

Summer Assignment for students taking AP Calculus AB and Calculus AH

Hello everyone hope your summer is going great. Here are four assignments that will help us get ahead at the beginning of the school year. I would suggest doing one assignment every two weeks so you are not bogged down at the end of the summer. Each assignment is designed to go over some of the skills you will need in calculus. All of the assignments are due the first day of school. I will go over them during class the first day and you will have your first quiz on the assignments the second day of school. You should use your prior knowledge of mathematics and your old notes to help you when needed.

Use the double angles and Pythagorean identities to prove the following statements true. You can only manipulate the left side of the problem.

Double - Angle Formulas

$$\sin 2u = 2 \sin u \cos u$$

$$\cos 2u = \cos^2 u - \sin^2 u = 2 \cos^2 u - 1 = 1 - 2\sin^2 u$$

$$\tan 2u = \frac{2 \tan u}{1 - \tan^2 u}$$

Prove the following:

3) $\frac{\sin 2x}{1 - \cos 2x} = \tan x$

4) $\sin^2 x \sec^2 x = \tan^2 x$

Property		Example
Product Property		
Quotient Property	—	
Power Property		
Recall: How do each of the following get rewritten using fractional exponents? — — — —		

Rewrite using Laws of Logarithms:

1.
2. —
3.

Special Right Triangles:

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Find the Exact Value

1.

2.

3.

4.

5.

6.

Directions: Find the exact value of each expression.

13.

14.

15.

16.

17.

18. —

19. —

20. —

21. —

22.

23.

24.

1) Find the x and y intercepts w/o a calculator of

2) Find the equation of the line passing through the points (3,2) and (5,5).

3) Find the domain of the function _____.

4) Find the vertical asymptotes of the function: _____.