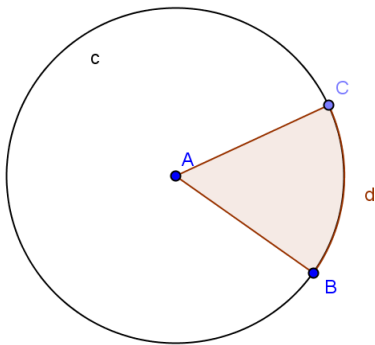


Advanced Math Week #1
Distributed Practice

In lieu of problem solving sheets, you will from time to time receive distributed practice sheets such as this one. Each sheet will have 7 problems worth 3 points each. One point will be awarded for the correct answer. Two points will be awarded for writing down the necessary work to solve the problem. You are not required to write an explanation for any of the problems, however, if you believe it is not possible to show any work, you may need to write a brief explanation depicting how you arrived at your answer. You must answer all questions.

1. An object has a velocity of 5 feet per second. What is its velocity in miles per hour given that 1 mile = 5280 feet?

2. Find the area of a sector formed by $\angle A$ if the central angle measures $\frac{\pi}{6}$, and the radius of the circle is 12.



3. Write an equation for the cosine function with amplitude 2, period 6π , phase shift 2π , and vertical shift of -5.

4. Solve the equation $2 \sin x \cdot \cos^2 x - \sin^3 x = 0$ for all values x in the interval 0° to 360° .

5. Write an equation that will allow you to determine the amount that a savings account will be worth if \$1000 is deposited and it compounds quarterly at an interest rate of 5% for 8 years. Then find the answer.

6. Determine the exact value of $\sec\left(\frac{13\pi}{6}\right)$.

7. Determine the value of $(1 + \sqrt{3}i)^{10}$ and express it rectangular coordinates.