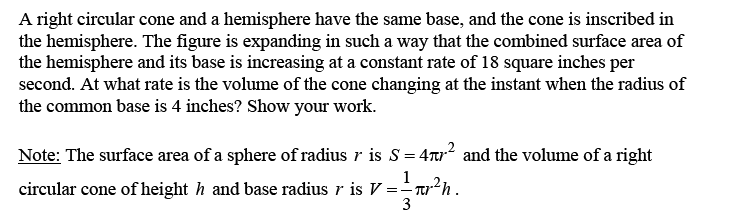
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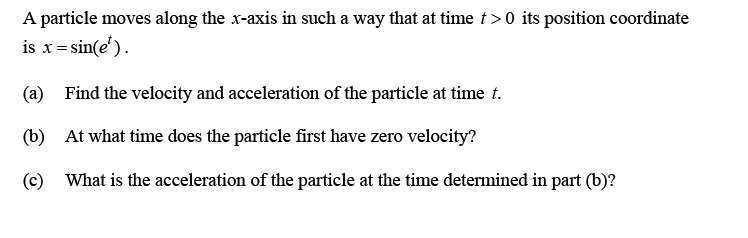
**November 21st, 2011**

**AP Calculus 1, Mrs. Sulkes**

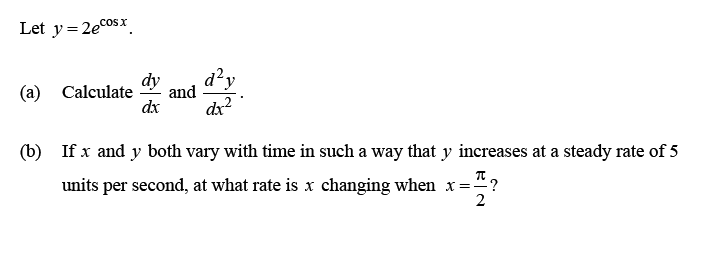
1.



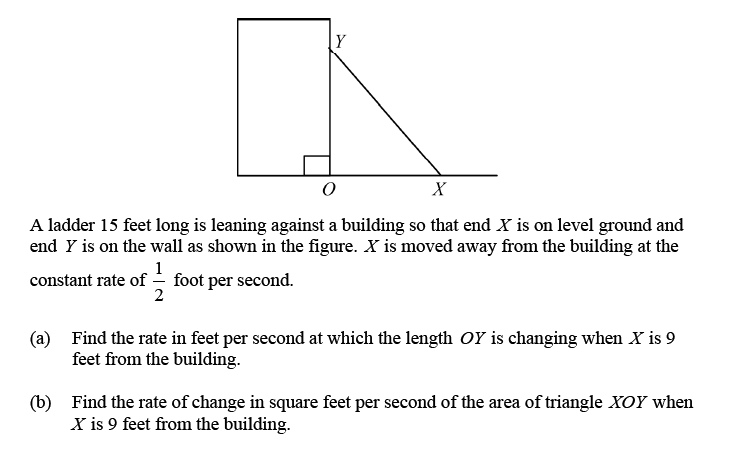
2.



3.



4.



5. An airplane is flying west at 500 ft/sec at an altitude of 4000 ft. The airplane is in a vertical plane with a searchlight on the ground. If the light is to be kept on the plane, how fast is the searchlight revolving when the airplane is due east of the search light at an airline distance of 2000 ft?

6. Suppose in a certain market that **thousands** of crates of oranges are supplied daily when dollars is the price per crate, and the supply equation is . If the daily supply is decreasing at the rate of 250 crates per day, at what rate is the price changing when the daily supply is 5000 crates? (hint: x is in thousands, so convert your values first!)

7. I recently went golfing. After a promising start, I landed 3 consecutive balls in the lake in front of the second green. As the first ball entered the water, it caused a multitude of ripples in the form of concentric circles emanating from the point of impact. The circumference of each circle was increasing at a steady rate of ft/sec. What was the rate of change of the area of the outermost ripple when its radius was 5 feet?

Some Review…

8. Find the first derivative of each of the following functions.

a. 

b. 

9. Given , if , find .