Math 2232 Quiz over Chapter 7

1. Consider the following assertion:  where the letters are all real numbers.

Is it true or false? If false provide a counterexample. If true, explain why it is true using concepts covered in this class. As a grace note, consider the title of this quiz and ask yourself if this looks like a Chapter 7 problem.

1. Find the volume of the solid generated by revolving the region bounded by about theaxis. Use any method you please.
2. A solid has a circular base of radius 4 units. Find the volume of the solid if every plane section perpendicular to a particular fixed diameter is an equilateral triangle.
3. Consider the function given by . Find the area of the region bounded by .
4. Consider the region bounded by Find the volume of the solid obtained by revolving this region about the line .
5. Find the area of the surface that is generated by revolving the portion of the curve  about the 
6. Find the area of the region between the curves  for .
7. Find the arc length of 

From ******

1. A cylindrical water tank of radius 10 ft and height 30 ft is half filled with water. How much work is required to pump all of the water out through a hole in the top of the tank? Your answer should be in ft pounds.
2. A plate in the form of an isosceles triangle with a base 10 feet and an altitude 4 feet is submerged vertically (base down and vertex at the surface of the fluid) in machine oil with weight density 30 pounds per cubic foot. Find the fluid force against the plate surface.
3. Find the centroid of the plane area bounded by the curves .