**Mr. Visca’s: Calculus (sec 7.3 part 1)**

**Chpt 7 – Day 5 – part 1: Slices for Volume**



Find the volume of the pyramid:

 Vpyramid = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Consider a horizontal slice through the pyramid.

 The volume of the slice is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



If we put zero at the top of the pyramid and

make down the positive direction, then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vslice = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Therefore the volume of the pyramid, which is the sum of all the slices, is...

 V =

**Method of Slicing (section 7-3, p400):**

1. Sketch the \_\_\_\_\_\_\_\_\_\_\_\_ and a typical \_\_\_\_\_\_\_\_\_\_\_\_\_\_ section.
2. Find a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for *V*(*x*).

 (Note that we used *V*(*x*) instead of *A*(*x*).)

1. Find the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of integration.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *V*(*x*) to find volume.



If we let *h* equal the height of the slice then the volume of the slice is: Vslice(x) =



Since the wedge is cut at a 45o angle, therefore, it forms an isosceles, 45-45-90 triangle,

Then: \_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$V(x)\_{slice}=2y∙h∙dx$$

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cavalieri’s Theorem:**

Two solids with equal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parallel cross sections have the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

