

## Geometric Formulas for the MATH 116 Exams

**I.** Students should know (or have on their notecard):

- A.** Perimeter as sum of side lengths (possibly arclengths)
- B.** circumference of a circle
- C.** Areas of
  - 1.** rectangles (given base and height)
  - 2.** triangles (given base and height),
  - 3.** circles (given radius),
  - 4.** trapezoids (given bases and height),
  - 5.** thin annuli (circumference times thickness)
- D.** Volumes of
  - 1.** boxes
  - 2.** cylinders
  - 3.** washers
  - 4.** cylindrical shells
- E.** Pythagorean Theorem and Distance Formula
- F.** Similar Triangles

**II.** Formulas that would be provided if needed (very far from an exhaustive list):

- A.** Areas for
  - 1.** equilateral triangles (given side length)
  - 2.** quadrilaterals other than rectangles and trapezoids (may need to set up integrals for these quantities)
- B.** Volumes of
  - 1.** spheres
  - 2.** cones (may need to set up integrals for these quantities)
- C.** Surface Areas of spheres and cones