

# Midterm Exam

(70 Minutes)

Write Legibly and Concisely

**CEG-476/676**

**Nov. 2, 2005**

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1. Describe an algorithm that uses the midpoint algorithm to scan convert curve  $x = y^3$  over the interval  $-5 < y < 5$ . (5 points)
  2. Is supersampling a better antialiasing method than subpixel weighting? Why? (5 points)
  3. Algebraically show that two consecutive rotations is commutative? (5 points)
  4. Find the composite transformation that will reflect a 3-D object with respect to plane  $x - y + z = 0$ . (6 points)
  5. Given two vectors  $\mathbf{V}_1 = (a, b, c)$  and  $\mathbf{V}_2 = (d, e, f)$  in a plane, calculate the dot product and the cross product of the two vectors. What does the dot product of the two vectors represent? What does the cross product of the two vectors represent? (4 points)