

5. (a) Compare and contrast the Intersection of Half-Planes and Winding Number Rule as insideness tests. [8]
- (b) What are z-buffers and how are they used to: (1) perform hidden surface removal; (2) blend opaque and transparent geometry; and (3) generate shadows? [10]
- (c) Explain why Phong shading is computationally more expensive than Gouraud shading of triangles. What is the Phong shading value at $(0, 0)$ for the triangle $(1, -1)_0, (0, 1)_1, (-1, -1)_2$ if the vertices have illumination/vertex normal attributes $\{I_0, \mathbf{n}_0\}, \{I_1, \mathbf{n}_1\}$ and $\{I_2, \mathbf{n}_2\}$? [7]