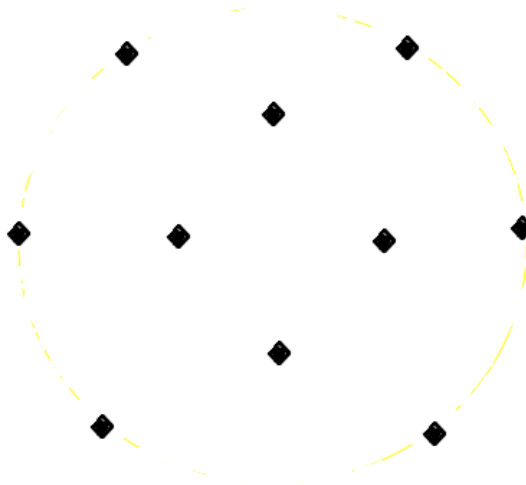


**Test Paper: Advances in Computer Graphics**  
**Master in Applied Mathematics**  
**February 2, 2017**

1. Use the Graham scan algorithm to triangulate the following polygon:



2. Draw (and explain the picture) the Voronoi's diagram for the following configuration:



3. Given three positive numbers  $a$ ,  $b$  and  $c$ , consider the Bézier control polygon  $P_0P_1P_2P_3$  and the corresponding Bézier cubic  $B(t)$ , with  $0 \leq t \leq 1$ , where  $P_0 = (0, -a)$ ,  $P_1 = (0, 0)$ ,  $P_2 = (b, 0)$  and  $P_3 = (b, \varepsilon c)$ ,  $\varepsilon = \pm 1$ . Find necessary and sufficient conditions on the given data under which  $B$  is a PH curve. Justify.