Discrete and Algorithmic Geometry

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Sheet 2

due on Monday, November 18, 2013

Reading

(1)

Writing

(1) Show that all induced cycles of length 3, 4 and 5 in the graph of a simple d-polytope P are graphs of 2-faces of P. Conclude that the Petersen graph is not the graph of any polytope (of any dimension).

(*Hint for* 5*-cycles:* First show this for $d = 3$, then prove that any 5-cycle in a simple polytope is contained in some 3-face, and use that a face of a simple polytope is simple.)

Software

(1)