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1) Using the velocity hodograph for an elliptic orbit of eccentricity $e = 0.5$, graphically determine the following quantities and verify their values using the appropriate formulas.

   a) The value of the flight path angle γ at $\theta = 45°$.
   b) The minimum value of the flight path angle on the orbit.
   c) The value of the radius r for part (a) in terms of the parameter p.
   d) The value of r for part (b).
   e) Will specification of the value of semimajor axis a determine numerical values to parts (c) and (d)?

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2) Curtis (4.3)

   To do this problem, see algorithm on pp. 191-193 in the text. Also find the semi-major axis a and time of perigee passage τ (in terms of t). Often, as in the class notes, a and τ are used as orbital elements in place of h and θ.

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3) Curtis (4.14)
