

Celestial Mechanics – Exercises

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Unit 10

Problem 10.1

Find the Hansen coefficients $X_0^{-2,2}$, $X_0^{-3,1}$ and $X_0^{-4,0}$.
(3 points)

Problem 10.2

Find the Hansen coefficient $X_0^{2,0}$.
(2 points)

Bonus Problem 10.3

Derive an expression for the Hansen coefficient $X_0^{n,0}$ (valid for all $n \geq 0$) to the e^2 accuracy. In other words, find the coefficients A , B , and C in

$$X_0^{n,0}(e) = A + Be + Ce^2 + O(e^3).$$

(2 bonus points)

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