

# Math 553: Asymptotics and Perturbation Methods Fall 2022

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Problem Set 3

Assigned Fri Sep 23

Due Fri Sep 30

## Watson's lemma

0. Reading: Bender and Orszag, section 6.4.
  1. Bender and Orszag, page 309, problem 6.26a,b.
  2. Bender and Orszag, page 309, problem 6.28a,b,c,d.
  3. Bender and Orszag, page 309, problem 6.29.
  4. Bender and Orszag, page 310, problem 6.42. Be sure to show how many terms in each expansion are needed in order to obtain the  $1/288$  coefficient for the  $1/x^2$  term.
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