

Physics 313 Suggested Exam Study Problems

This list is very long, so that you can pick and choose depending on which material you feel you need the most practice with.

Short and conceptual, about pressure and temperature: 1.11, 1.19, 1.21, 1.26, 1.27, 1.38

1.33, 1.34 Are these questions for chapter 1 - or perhaps chapter 4?

1.40 - especially for atmospheric science students

1.49 enthalpy

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2.8 einstein solid - review

2.16 stirling approx

2.18,2.22 multiplicity, sharp peak

2.30 entropy as a log of multiplicity

2.37 entropy of mixing

2.40 irreversible processes

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3.6

3.10

3.14

3.29

3.33

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1.33, 1.34 Are these questions for chapter 1 - or perhaps chapter 4? Together with:
4.1,4.12

4.16

4.24 steam engines

4.28 enthalpy and entropy

4.31

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5.5

5.8

5.10

5.20

5.21

5.23 (this might be a little hard)

5.26

5.42

6.2

6.3

6.11

6.14

6.15 clarifies the formula for averages (if you think about it while you are doing the problem)

6.34

6.51 (a somewhat non-trivial problem)

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7.8

7.11

7.13

7.19 (do this at zero temperature, all you need are results from PS 11, skip the Fermi temperature, as we did not talk about it)

7.38

7.40

7.51(a)(b)

7.52

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Math exercises/review:

1.45 partial derivatives

2.12-14 logarithms

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If you are interested in the details of White Dwarfs and Neutron Stars, check out 7.23 and 7.24

If you are interested in Black Holes, try 2.42, 3.7 and 7.52.