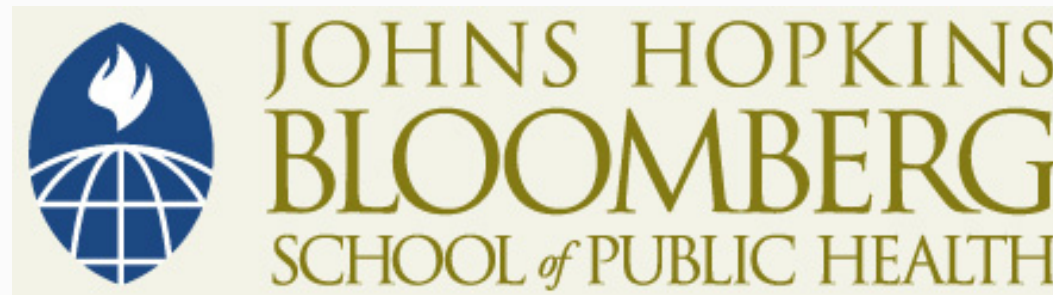


This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike License](https://creativecommons.org/licenses/by-nc-sa/4.0/). Your use of this material constitutes acceptance of that license and the conditions of use of materials on this site.



Copyright 2009, The Johns Hopkins University and John McGready. All rights reserved. Use of these materials permitted only in accordance with license rights granted. Materials provided "AS IS"; no representations or warranties provided. User assumes all responsibility for use, and all liability related thereto, and must independently review all materials for accuracy and efficacy. May contain materials owned by others. User is responsible for obtaining permissions for use from third parties as needed.



JOHNS HOPKINS  
BLOOMBERG  
SCHOOL *of* PUBLIC HEALTH

## Lecture 2c: Practice Problems

---

John McGready  
Johns Hopkins University

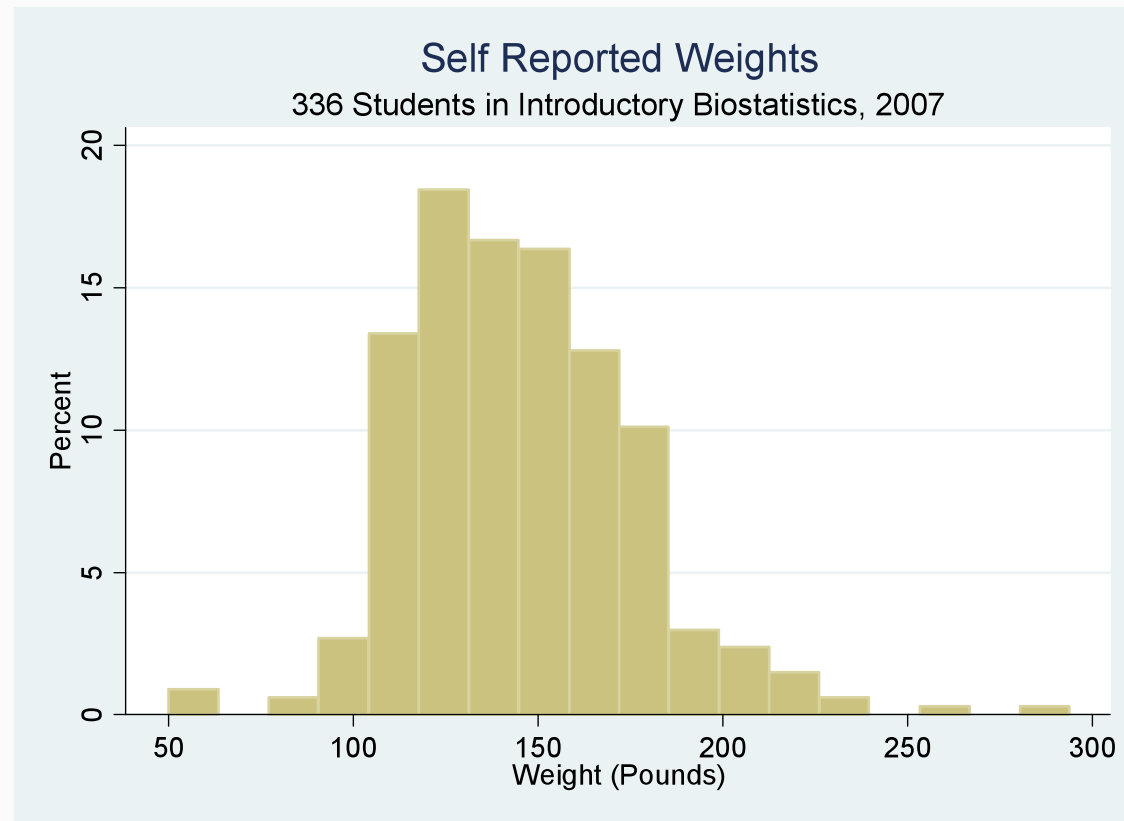
# Practice Problems

1. The following boxplot shows the distribution of self-reported weights (in pounds) of 336 students enrolled in an introductory biostatistics course at JHBSPH in year 2007
  - Mean: 145 lbs; median 141 lbs; SD 31 lbs



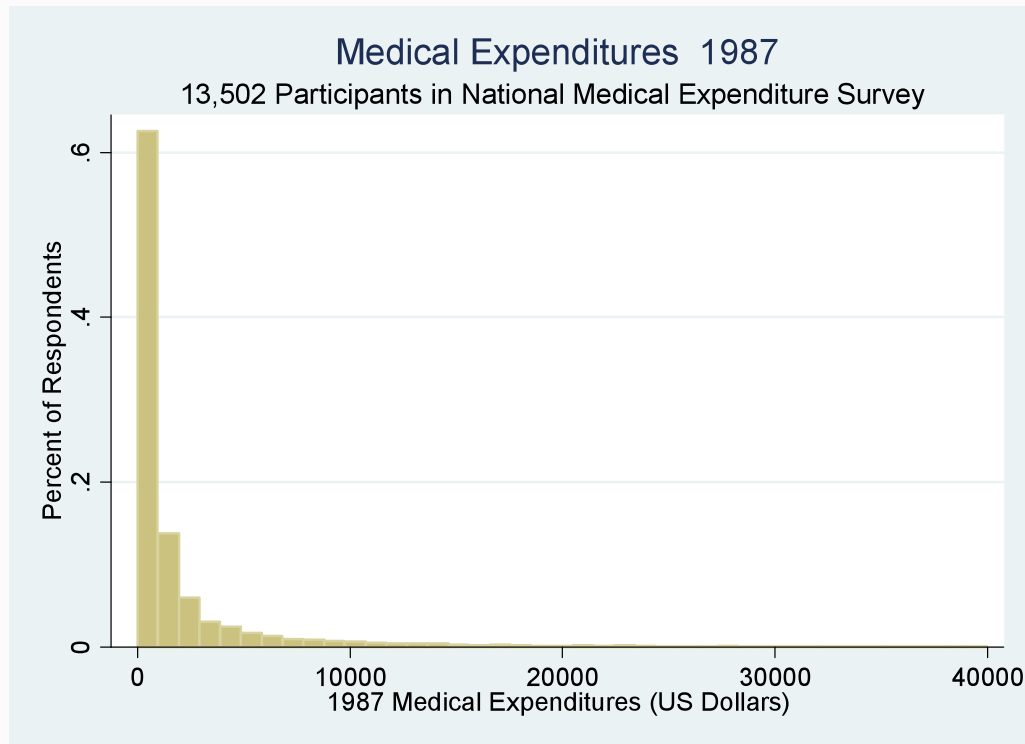
# Practice Problems

1. Here is the same data displayed in a histogram.
  - The 2.5th percentile is 97 lbs, the 97.5th percentile is 220 lbs. Applying the formula  $\bar{x} \pm 2 \times s$  gives a range of 85 lbs to 205 lbs.



# Practice Problems

2. The following histogram shows the distribution of medical expenditures (in U.S. dollars in the year 1987) for participants in the National Medicare Expenditures Survey (NMES)
- Mean \$2,300; median \$588; SD \$4,957
  - 2.5th percentile: \$10; 97.5th percentile \$18,430
  - Applying the formula  $\bar{x} \pm 2 \times s$  gives a range of \$-7,714 to \$12,214



# Practice Problems

3. The following histogram shows the temperature measured at 12 noon on everyday of a fifteen year period for the U.S. city of Philadelphia (5,471 days)
- Mean 54; median 55; SD 18
  - 2.5<sup>th</sup> percentile 20; 97.5<sup>th</sup> percentile 81
  - Applying the formula  $\bar{x} \pm 2 \times s$  gives a range of 18 to 90

