Density Curves

Reading

- Section 2.5

Practice Problems

2.6.5 (page 125) 2.43, 2.44

Notes

- The book refers to them as "continuous probability functions".

- Think of them like "smooth histograms".

- Used to describe large (infinite) populations.

- Key property:

  Area under the curve and between v_1, v_2 is equal to the percent of data values that are between v_1 and v_2.
  Total area under curve equals 1 (100%).

- To really compute things would need to know the equation of this curve, and do some Calculus.

- Some examples of distributions are easy to work with:

  Uniform Straight line from a to b. Represents the idea that all numbers between a and b are equally likely.
  Normal Has well known formula and tables to use. We will see this in next section.

Uniform Distribution

- Graph is a straight line at height $\frac{1}{b-a}$, extending from $x = a$ and $x = b$.

- Can compute areas as they are just rectangles.

  Shape Symmetric
  Mean $\frac{a+b}{2}$
  Median $\frac{a+b}{2}$
  Std Dev $\sqrt{\frac{(b-a)^2}{12}}$
  Quartiles One fourth and three fourths of the way from a to b.
  IQR $\frac{b-a}{2}$