

Quiz Tues March 26 Section 6.3

Tues April 2 Section 8.1

Test

Wed Apr 3

5.2-5.4, 6.1-6.4, 8.1-8.3

(8 Questions)

Practice Questions on website

Bring calculator

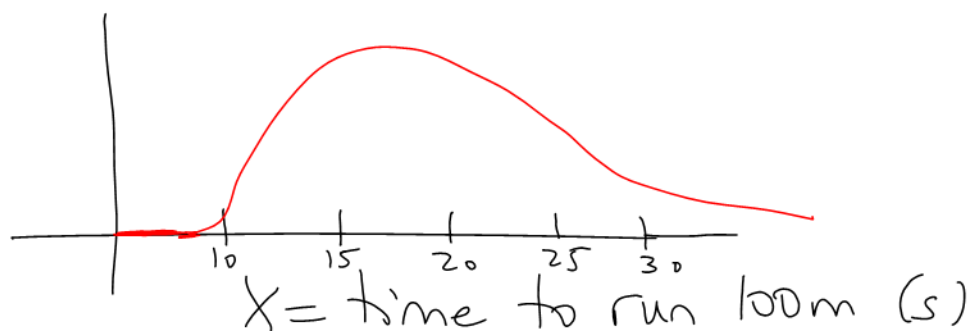
Thurs March 28 Test Review

9.1 Continuous Random Variables

A continuous variable X
has infinitely-many decimal places.

e.g. mass of an apple (g)
time to run 100m (s)
temperature

We can't list all the values of X
in a table so we use a
density curve.



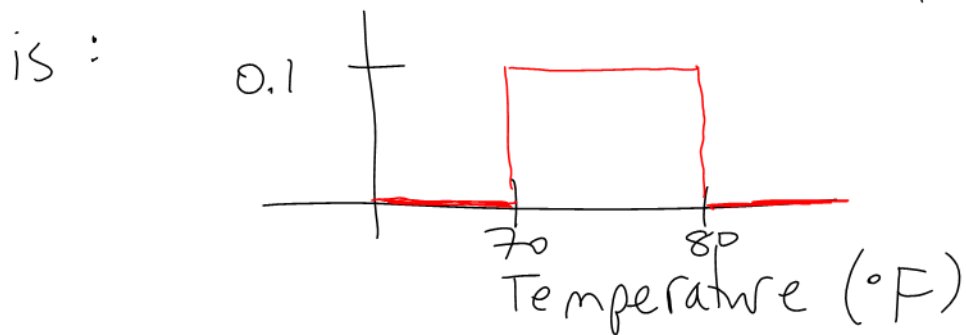
Properties of a Density Curve

1. The curve is on or above the x -axis.
2. The area under the curve is 1 (100%)
3. Probability is area under the curve.
4. The probability of a single x -value is 0.

$$P(12.58762\dots) = 0$$

We'll look at probability for
a range of x -values.

Ex: Consider the temperature in March in Pasadena. The density curve



Find the probability that the temperature is:

a) less than 73°F



$$\begin{aligned} \text{probability} &= 3(0.1) \\ &= 0.3 \end{aligned}$$

b) exactly 73°F

○

$P(73.000\dots^\circ\text{F})$
is zero

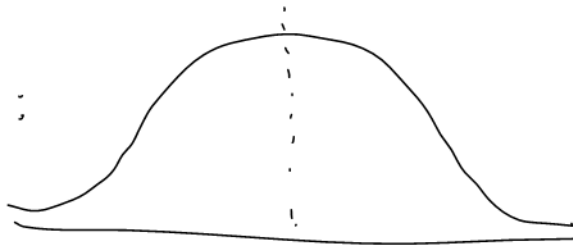


$$\begin{aligned} \text{area} &= 0(0.1) \\ &= 0 \end{aligned}$$

9.2-9.4 The Normal Distribution

We'll look at continuous variables that are unimodal and symmetric.

density
curve



Also called: mound-shaped
bell-shaped

Formally the shape is called
the normal distribution.

FACT
probability = area under the curve

For lectures and suggested homework,
use the online calculator:

davidmlane.com/hyperstat/z_table.html

For quizzes and exam:
Conceptual questions only

Ex: The driving time between campuses
is normally distributed with a mean
of 30 mins and a standard deviation
of 10 mins. Find the probability
that the drive takes:

a) more than 45 mins

mound-shaped

$$\mu = 30$$

$$\sigma = 10$$



Use online calculator.

- Select "area from value"
- Input μ and σ
- Select range
- Hit "recalculate"

Answer:

0,0668