WS #17 - Hazard function

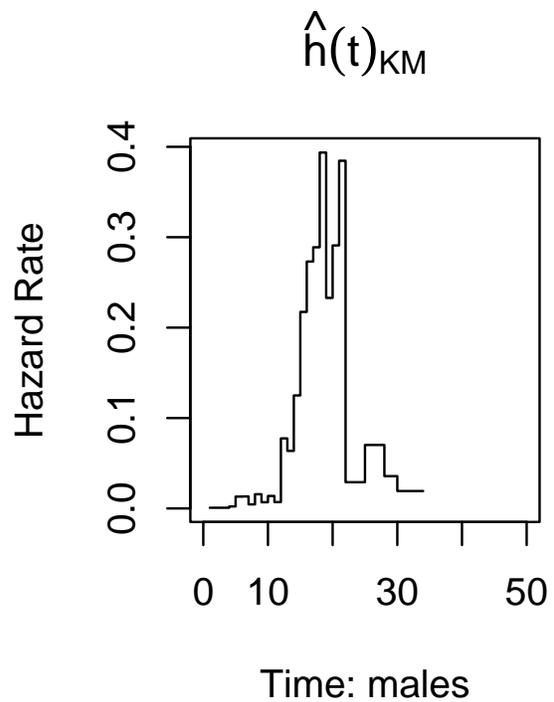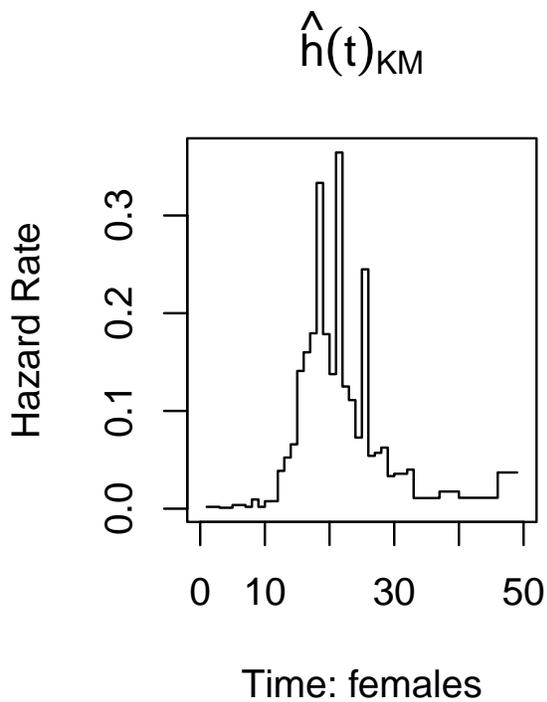## Math 150, Jo Hardin

Wednesday, March 25, 2026

Your Name: _____

Names of people you worked with: _____

What is the best on-campus job?

Task: The two curves below represent the KM hazard rate functions for age at first drink for samples of males and females.

  a. Describe what you see in the curves.
  b. Give one difference between the two curves.
  c. Give one similarity between the two curves.

$\hat{h}(t)_{KM}$

$\hat{h}(t)_{KM}$

Time: females

Time: males

Solution:

a. What do the curves show?

- Note that the y-axis is *not* a probability. It is an instantaneous rate.
- At a given age, the y-axis represents the rate of first

b. Differences:

- Males are at higher risk below 20, females are at higher risk after 20.
- The age at which females have their first drink is more spread out than for males.
- Females are still at risk even as old as 50.

c. Similarities:

- We see that generally the first drink happens between 15 and 25.
- There are peaks (meaning a high rate or risk) at ages like 18, 21, and 25.
- Both groups have very low rates below 10 yers old.