

# Test #1

Note Title

9/26/2005

Virtual Office hours 7-8PM Tuesday

Ch 1-3, 4.1-4.3

4:30-6PM

1a) Find  $E(X)$

$\int_0^{\infty} x \cdot f(x) dx$

Exam Questions

① 28pts 6 parts

② 22pts 4 parts

$E[aX+b] = aE(X) + b$

③ 3 short answers. 20pts  $P(A \cap B) = P(A) + P(B) - P(A \cup B)$

④ 10pts

- HW problem
- In-class problem

a)  $E(L) = 7$

b)  $E(L) \pm 2 \cdot \sqrt{\text{Var}(L)}$

$N \pm 2 \cdot \sigma$

What to study?

- 1) Class notes
- 2) Projects
- 3) HW problems
- 4) Book  $\rightarrow$  Examples

Ch 1

Ch 2 - Probability

- Definitions
- $P(A|B)$ ,  $P(A \cap B)$ ,  $P(A \cup B)$
- Independence
- Binomial

Ch 3 - R.V.s and PDFs

- Moments, a.m., P.D.F., C.D.F.
- Find  $P_{20}$
- Joint PDFs
  - $g(x)$ ,  $h(y)$ , independence

## Ch. 4 - Expectation

-  $E(X)$ ,  $E[g(X)]$

- Interpret

- Sample

-  $\text{Var}(X) = E[(X - \mu)^2]$ ; Stand. dev.

- Rule of thumb

- Covariance, Correlation

- Independence

$$-1 < \rho < 1$$

