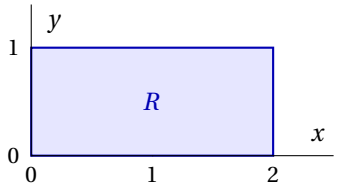
Homework 7 **92.386 203 Prob & Stat I** **Due Mar 11**

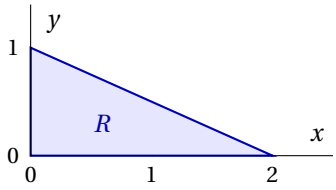
Show all your work. Late Homework will not be accepted without prior approval.

1. Set up the iterated integrals for $\iint_R f\,dA$ in both orders for each of the following regions —

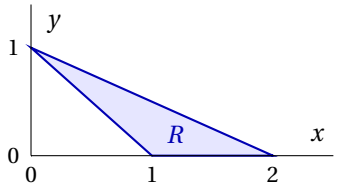
(a)



(b)



(c)



2. A coin with sides marked 2 and 4 and a regular die are thrown. Let X be the number on the coin and Y the absolute difference between the numbers on the coin and die.

(a) Find the joint density function $f_{X,Y}$

		Y				
		0	1	2	3	4
X	2					
	4					

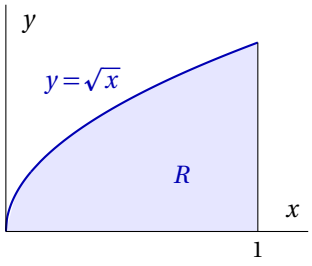
(b) The rows of the table each sum to 1/2. Explain in words what this means?

(c) The sum of the $Y=2$ column is 1/4. What does this mean?

(d) Find the marginal density function for Y.

(e) Are X and Y independent? Explain.

3. Let $f_{X,Y}(x,y)=k\,x, (x,y)\in R$.



(a) Find k.

(b) Find $P(Y<X)$.

(c) Find $P(X<Y)$.

(d) Find the marginal density functions f_X and f_Y.

(e) Are X and Y independent? Explain.