3/18/2002                     MA331 Applied Prob/Stats I              Name:_____
Dr. Lunsford                           Quiz 8                          (20 Points Total)

I.  Let $X$ be a continuous uniform random variable with p.d.f given by $f(x) = \dfrac{1}{b-a}$ for

$a \le x \le b$ .  Please answer the following:

(a)  Using the definition, prove that the mean of this distribution is $\dfrac{a+b}{2}$  (5 points)

(b) Now suppose that $a = 2$ and $b = 5$.  Find the cumulative distribution function (c.d.f.) for $X$ .
Clearly indicate your answer.  (5 points)

(c)  Still assuming that $a = 2$ and $b = 5$, graph
the p.d.f. and the c.d.f. on the axe s provided to the
right.  Be sure to indicate which graph is the p.d.f.
and which graph is the c.d.f.    (5 points)
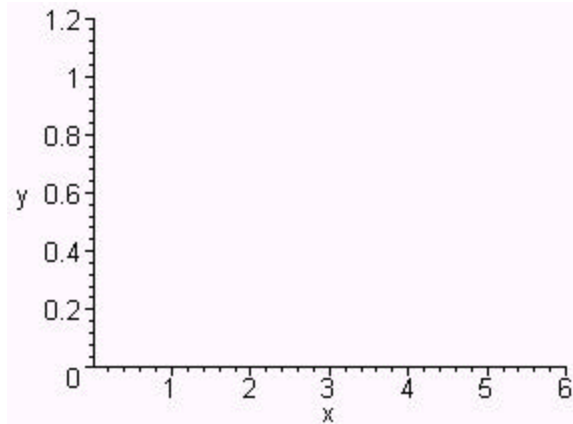


II.  Suppose that the random variable $X$ has the p.d.f. $f(x) = \dfrac{3}{16}\sqrt{x}$ for $0 \le x \le 4$.  A graph of

this p.d.f. is given below.  Find $P(1 < X < 6)$ and show this probability on the graph.  (5 points)