Math 327 Homework 3 Anchu A. Lee
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Question 4.2

x	0	1	2	3
$f(x)$	$\frac{27}{64}$	$\frac{27}{64}$	$\frac{9}{64}$	$\frac{1}{64}$

$E(X) = \sum_{x=0}^{3} x \cdot f(x) = 0 \cdot \frac{27}{64} + 1 \cdot \frac{27}{64} + 2 \cdot \frac{9}{64} + 3 \cdot \frac{1}{64} = \frac{3}{4}$

Question 4.4

$P(H) = \frac{3}{4}$, $P(T) = \frac{1}{4}$

x	0	1	2
$f(x)$	$\frac{9}{16}$	$\frac{6}{16}$	$\frac{1}{16}$

$E(X) = 0 \cdot \frac{9}{16} + 1 \cdot \frac{6}{16} + 2 \cdot \frac{1}{16} = \frac{1}{2}$

Question 4.10

$\mu_X = 1 \cdot 0.17 + 2 \cdot 0.50 + 3 \cdot 0.33 = 2.16$
$\mu_Y = 1 \cdot 0.23 + 2 \cdot 0.50 + 3 \cdot 0.27 = 2.04$

Question 4.14

$E(X) = \int_0^1 \frac{x \cdot 2(x+2)}{5} dx = \frac{8}{15}$

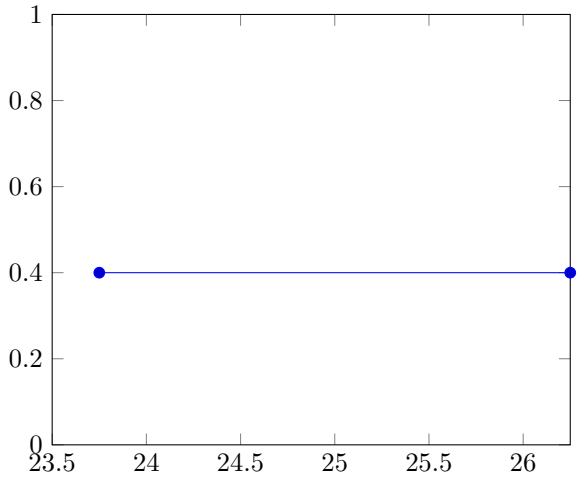
Question 4.18

$E(X^2) = \sum_{x=0}^{3} x^2 \cdot f(x) = 0 \cdot \frac{27}{64} + 1 \cdot \frac{27}{64} + 4 \cdot \frac{9}{64} + 9 \cdot \frac{1}{64} = \frac{9}{8}$

Question 4.20

$E(e^{2X/3}) = \int_0^\infty e^{2x/3} \cdot e^{-x} = 3$

Question 4.28



Question 4.34

Question 4.38
Question 4.40
Question 4.46
Question 4.58
Question 4.60
Question 4.62
Question 4.64
Question 4.76
Question 4.92

Question 4.98