

## HOMEWORK 3

**Section 3.5:** 4, 10, 13, 16, 17, 24, 26, 30, 38, 43<sup>1</sup>

Answers:

4. 6

10. (a)  $x^{1/2}$  (b)  $1 - \sqrt{3}/2$  (c)  $1/6$

13. No.

16.  $F_Y(x) = F(x)^n$  and  $F_Z(x) = 1 - (1 - F(x))^n$

17.  $1 - (1 - F(x))^n = 1 - (1 - (1 - e^{-\lambda x}))^n = 1 - e^{-n\lambda x}$ .

24.  $g(x) = 1 - x^{-3}$  and  $h(u) = (1 - u)^{-1/3}$ .

26.  $(1/\alpha)y^{(1/\alpha)-1}$

30. find inverse then use formula

38.  $(5/6)^2$

43.  $f_z(x) = \begin{cases} 1/2, & 0 \leq z \leq 1 \\ 1/2z^2, & z > 1 \end{cases}$

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<sup>1</sup>typo should be  $P(Y/X \leq z)$