

Homework 4 (Graded)

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Due **Wednesday 7/10**

S4.1: Suppose I flip a coin with heads probability p repeatedly, stopping when I reach k tails. What is the expected number of flips I will make? (Hint: use a familiar discrete distribution, whose expectation is given in ASV, and linearity of expectation.)

S4.2: Let $f_X(x) = c \frac{1}{(1 + (\frac{x}{\sigma})^2)}$. Calculate c and $E[X]$. You may evaluate integrals with a computer, but show where you have done so.

S4.3: Suppose the random variable X is always positive (its density on the negative numbers is zero). Prove that $E[X] = \int_0^\infty (1 - F_X(x)) dx$.

Points 6

Submitting on paper

Due	For	Available from	Until
-	Everyone	-	-

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