Discrete Models of Financial Markets
Errata

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Exercise 2.7 Assuming $\mathbb{E}_P(K_H) \geq R$ show that

$$\mathbb{E}_P(K_H) - R = (p - q)\frac{\sigma K_H}{\sqrt{p(1-p)}},$$

where q is the risk-neutral probability, implying in particular that $p \geq q$.

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$$\mathbb{E}_P(K_H) - R = (p - q)\frac{\sigma_{K_H}}{\sqrt{p(1-p)}},$$

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Exercise 2.26 Consider a trinomial model for stock prices with $S(0) = 120$ and $S(1) = 135, 125, 115$, respectively. Assume that $R = 10\%$. Consider a call with strike 120 as the second security. Show that $C(0) = \frac{120}{11}$ allows arbitrage and that there is a unique **degenerate** probability which makes discounted stock and call prices a martingale. Carry out the same analysis for $C(0) = \frac{255}{12}$ and draw a conclusion about admissible call prices.

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Exercise 6.5 An investor gambles on a decrease in interest rates and wishes to earn a return $K(0, n)$ higher by 1% than the current rate $L(0, n)$. Sketch the graph of the function $k \mapsto L(k, n)$ which would allow one to achieve this at any $0 < k < n$. First try the data from Example 6.1.

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Exercise 6.5 An investor gambles on a decrease in interest rates and wishes to earn a return $K(0, k)$ higher by 0.1% than the return implied by the current rates. Sketch the graph of the function $k \mapsto L(k, n)$ which would allow one to achieve this at any $0 < k < n$. First try the data from Example 6.1.