2B, p. 57, 3rd line from bottom: The **likelihood** is

3H, pages 353 to 354:
With r = 6%, p* = (exp[(.06-.01)/2] - 0.95)/(1.15 - 0.95) = 0.502.
The call premium at the up node is: $e^{-0.01/2}$ {(0.502)(21) + (0.498)(4.5)} = 12.72.
The call premium at the down node is: $e^{-0.01/2}$ {(0.502)(4.5) + (0.498)(0)} = 2.25.
Δ_0 = exp[-0.005] (12.72 - 2.25)/(110 - 95) = **0.695**.
4.5 = 7.10 + (4.5)(0.695) + $(4.5)^2$(0.0454)/2 + (2)(1/2)θ. ⇒ θ = **-6.19**.
On a daily basis, θ = -6.19/365 = **-0.0170**.

3I, p. 384: **Sharpe Ratio =** $\dfrac{\textbf{Expected Return - r}}{\sigma}$.

Since the expected return on a put, γ, is less than r, the risk premium for a put is negative. Therefore, the Sharpe ratio is negative for a put. Thus, using the same reasoning as for a call, the Sharpe ratio of a put is equal to the negative of the Sharpe ratio of the stock.[1]
Exercise: r = 6%. A put has γ = -17% and volatility of 70%. Determine the Sharpe Ratio for the put.
[Solution: $\dfrac{\text{Expected Return - r}}{\sigma}$ = (-17% - 6%)/70% = -0.33.
Comment: Note that the Sharpe Ratio for the put is negative.]

The absolute value of the Sharpe ratio of an option is equal to the Sharpe ratio of the underlying stock.

3L, p. 498, near the bottom: or $\ln\left[\dfrac{F_{0,T}^P[K]}{F_{0,T}^P[S]}\right] = \ln[F_{0,T}^P[K]] - \ln[F_{0,T}^P[S]]$.

3M, p.505, Q.49.1: (i) The European put option is to **sell** one pound for dollars.

3N, p.557, solution to the first exercise: X(6) is Normal with mean 5 + (3)(**6**) = **23**.

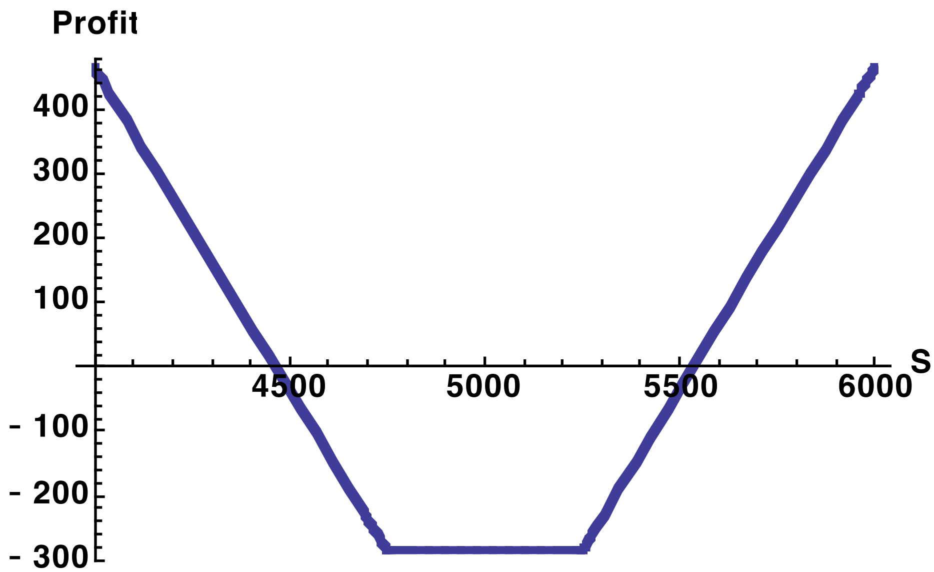
3S, p. 752, solution to exercise was not consistent with the results of previous exercises:
As determined previously: B = 1.67361, A = 0.96509, P = 0.88762.
Δ = -B P = -(1.67361)(0.88762) = -1.486. Γ = B^2 P = (1.67361^2)(0.88762) = 2.486.
Comment: Thus an immediate increase of interest rates from 5% to 6% would change the price of the bond by about: (.01)(-1.486) + ($.01^2$)(2.486)/2 = -0.0147.

[1] In Derivative Markets, McDonald does not discuss the Sharpe ratio of a put.

3U, p. 826: Sharpe Ratio = $\frac{\text{Expected Return - r}}{\sigma}$.

The absolute value of the Sharpe ratio of an option is equal to the Sharpe ratio of the underlying stock.

3Y, p. 990, solution 28.8: If the investor buys both the 5250 strike call and the 4750 strike put:



The initial investment to buy the 5250 strike call and the 4750 strike put is:
187.06 + 91.58 = 278.64.
Accumulating this initial investment at the risk free rate of 5% for 6 months:
(278.64) exp[0.025] = 285.69.
The value of the portfolio 6 months from now, when the options expire, is the payoff on the 5250 strike call plus the payoff on the 4750 strike put.
For example, if the stock price in 6 months is 4900, then the sum of these payoffs is: 0 + 0 = 0.
If the stock price in 6 months is 4900, then the profit is: 0 - 285.69 = -285.69.
If instead the stock price in 6 months is 6000, then the profit is: 750 + 0 - 285.69 = 464.31.

3Y, p. 1004, Sol. 33.3: The put premium at the up node is:
{(150 - 143.72)(1 - 0.4853)}/exp[0.05/12] = 3.22.
The put premium at the down node is:
{(150 - 143.72)(0.4853) + (150 - 128.05)}exp[0.05/12] = 14.29.
Δ_0 = exp[-.02/12] (3.22 - 14.29)/(151.88 - 135.32) = -0.6674.

$\theta = \{P(S_{ud}, 2h) - (S_{ud} - S_0)\ \Delta(S, 0) - (S_{ud} - S_0)^2\ \Gamma(S, 0)/2 - P(S_0, 0)\}/\ (2h)$

$= \{6.28 - (143.72 - 143)(-0.6674) - (143.72 - 143)^2(0.0388)/2 - 8.88\}/(2/12) = -12.78$.

On a daily basis, θ = -12.78/365 = **-0.0350**.

3Y, p. 1005, Sol. 33.6: The call premium at the up node is:
{(38.79)(0.4593) + (5.70)(1 - 0.4593)}/exp[0.07/6] = 20.66.
The call premium at the down node is:
{(5.70)(0.4593) + (0)(1 - 0.4593)}exp[0.07/6] = 2.59.
Δ_0 = exp[-.01/6] (20.66 - 2.59)/(99.89 - 72.06) = 0.6482.

$\theta = \{C(S_{ud}, 2h) - (S_{ud} - S_0)\ \Delta(S, 0) - (S_{ud} - S_0)^2\ \Gamma(S, 0)/2 - C(S_0, 0)\}/\ (2h)$

$= \{5.70 - (85.70 - 84)(0.6482) - (85.70 - 84)^2(0.0273)/2 - 10.76\}/(2/6) = -18.63.$

On a daily basis, θ = -18.63/365 = **-0.0510**.

3Y, p. 1007, Sol. 33.9:
At the initial node, the continuation value is: {(14.48)(61%) + (**90**)(39%)}/$e^{.1}$ = 39.75.

3Y, p. 1021, Sol. 38.2: $\dfrac{\text{Expected Return - r}}{\sigma}$ = (-20% - 4%)/50% = **-0.48**.

3Y, p. 1021, Sol. 38.6: Sharpe Ratio for stock = $(\alpha - r)/\sigma_{stock}$ = (13% - 5%)/35% = 0.229.
Sharpe Ratio for put = -Sharpe Ratio for stock = **-**0.229.

3AA, p. 1097, sol. 56.27: variance (6)($5^{\mathbf{2}}$) = **150**.

3Ex3, sol.3: P(0, 1) = p* $e^{-(.06+.07)/2}$ + (1 - p*) $e^{-(.06+.05)/2}$ = 0.9431.

3Ex3, Q.4: Determine the delta for a **3**-year 70-strike Gap Call with a payment trigger of 90.