

## Errata and updates for ASM Exam MFE/3F (Ninth Edition Tenth Printing) sorted by page

[5/31/2016] On page 41, on the fourth line from the bottom, change “gain of” to “gain is”.

[9/15/2016] On page 53, the solution to exercise 2.8 is incorrect. The correct solution is

To have no loss initially, we need the proceeds from the 65-strike puts (12 for each put sold) to exceed the cost of the 50-strike puts (5 for each of the ten purchased) plus the cost of the 75-strike puts (15 for each put purchased), or

$$\begin{aligned} 12x &\geq 10(5) + 15y \\ 12x - 15y &\geq 50 \end{aligned}$$

To have no loss if the 65-strike puts are exercised when the stock price is less than 50, the worst possible case is if the stock price is 0. (We assume the stock price cannot be negative.) Then the gain on ten 50-strike puts and  $y$  75-strike puts plus the initial gain must exceed the gain on  $x$  65-strike puts, or

$$\begin{aligned} 50(10) + 75y + 12x - 15y - 50 &\geq 65x \\ 53x - 60y &\leq 450 \end{aligned}$$

If the 65-strike puts are exercised, we can exercise the 75-strike puts simultaneously. To have no loss if the 65-strike puts are exercised when the stock price is between 50 and 65 (50 being the worst case), we need the payment on the  $x$  65-strike puts minus the proceeds from the  $y$  75-strike puts (since the 50-strike puts may end up being worthless) to be less than the initial gain, or

$$\begin{aligned} 15x - 25y &\leq 12x - 50 - 15y \\ -3x + 10y &\geq 50 \end{aligned}$$

The intersection of the first and second constraints is

$$\begin{aligned} 12x - 15y &= 50 \\ 53x - 60y &= 450 \\ 48x - 60y &= 200 \\ x &= 50 \\ y &= \frac{12(50) - 50}{15} = \frac{110}{3} \end{aligned}$$

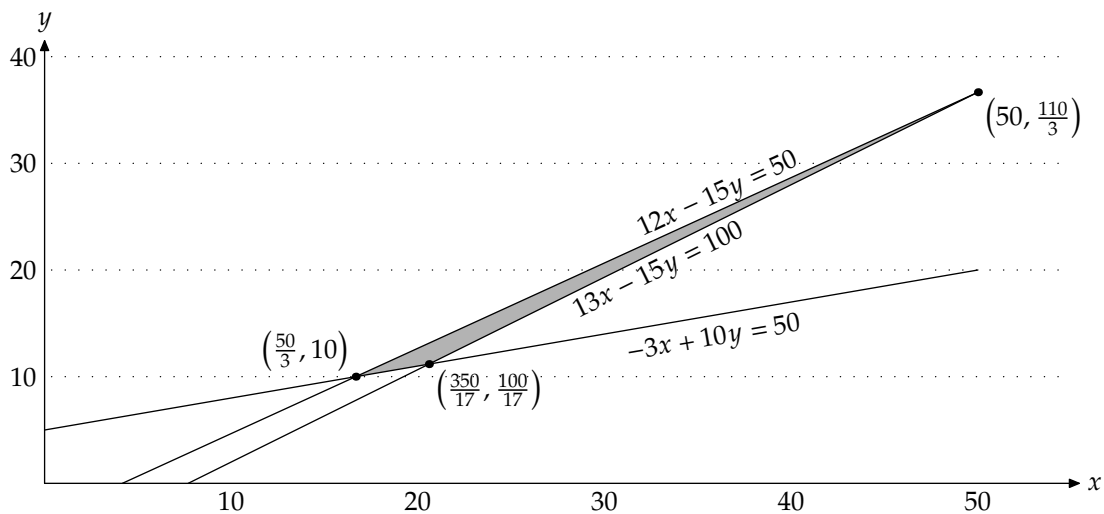
The intersection of the first and third constraints is

$$\begin{aligned} 12x - 15y &= 50 \\ -3x + 10y &= 50 \\ -12x + 40y &= 200 \\ y &= 10 \\ x &= \frac{50}{3} \end{aligned}$$

The intersection of the second and third constraints (not needed to answer the exercise's question) is

$$\begin{aligned} 53x - 60y &= 450 \\ -3x + 10y &= 50 \\ -18x + 60y &= 300 \\ 35x &= 750 \\ x &= \frac{150}{7} \\ y &= \frac{50 + 3(150/7)}{10} = \frac{80}{7} \end{aligned}$$

This figure shows the area of possible  $(x, y)$ . Thus  $\boxed{50/3 \leq x \leq 50}$ .



Thus  $\boxed{50/3 \leq x \leq 50}$ .

- [2/5/2016] On page 133, in the solution to exercise 5.10, on the last line, put a negative sign before  $4 \ln \frac{0.5201e^{-0.01}}{0.55}$ .
- [4/6/2016] On page 135, in the solution to exercise 5.14, on the fifth and second lines from the end, change 1.91579 to 1.921579 once on each line.
- [4/6/2016] On page 139, on the second to third lines of the answer to Example 6A, change "the present value of the strike price" to "the present value of the interest on the strike price".
- [9/28/2016] On page 141, on the seventh line of "2. Lognormal tree", delete  $h$  after  $(r - \delta - 0.5\sigma^2)$ .
- [4/12/2016] On page 168, in the solution to Quiz 7-3, on the first displayed line, surround the right side with  $N$  and parentheses:

$$N\left(\frac{\ln(60/70) + (0.15 - 0.05 - 0.5(0.2^2))(0.25)}{0.2\sqrt{0.25}}\right)$$

- [10/18/2016] On page 174, one line above the second table, change  $N^{-1}(F_n(y_i))$  to  $N^{-1}(y_i)$ .

- [2/27/2016] On page 188, on the first line of the passage headed “Discrete Dividends”, change  $S_t/S_0$  to  $S_1/S_0$ .
- [12/17/2015] On page 251, change the last line of the page to  
Calculate the implied volatilities of the stock based on the option prices for these three periods using the Black-Scholes model.
- [4/21/2016] On page 261, in the solution to exercise 11.12, on the second line, change  $\sigma\sqrt{t}$  to  $0.5\sigma\sqrt{t}$ .
- [5/6/2016] On page 264, on the sixth and eight lines of the answer to Example 12A, change 9.542 to 9.543. Two lines from the bottom of the page, change 9.542 to 9.543 and 16.6 to 16.7. On the last line of the page, change  $16.6 - 1.3 = \boxed{15.3}$  to  $16.7 - 1.3 = \boxed{15.4}$ .
- [5/6/2016] On page 268, on the seventh line, change 9.542 to 9.543 in both places. On the eighth line, change 2.898 to 2.897. On the last line of the answer to Example 12D, change  $7.076 - 9.542 = -2.466$  to  $7.076 - 9.543 = -2.467$ . In the answer to Example 12E, on the second line of (a), change  $9.370 - 9.543 = -0.173$  to  $9.376 - 9.543 = -0.167$ . On the third line of the answer to (b), change  $12.248 - 9.543 = 2.705$  to  $12.274 - 9.543 = 2.731$ . On the third line of the answer to (c) on page 269, change  $6.904 - 9.543 = -2.639$  to  $6.916 - 9.543 = -2.627$ .
- [12/21/2015] On page 289, in the solution to exercise 12.11, on the last two lines of the first paragraph, change “and we buy this number of options” to “and we buy 2.33329 put options”.
- [10/14/2016] On page 312, on the third line of the answer to Example 13I, change “strike price” to “stock price”.
- [2/27/2016] On page 328, in the solution to exercise 13.29, on the second to last line, change “are the as” to “are then as”.
- [8/11/2016] On page 361, in exercise 14.34, on the second line, change the first “is” to “if”.
- [5/11/2016] On page 371, in the solution to exercise 14.30, on the fourth line, change 0.21301 to 0.21309.
- [8/11/2016] On page 398, in the solution to exercise 15.7, on the first line, change “parameter” to “parameters”.
- [12/30/2016] On page 399, in the solution to exercise 15.8, 6 lines below the table, change 1.1092 to 1.0192.
- [12/23/2015] On page 411, starting with the fifth line of Section 16.4, delete “Assume  $X(0) = 0. . .$ ” up to the end of the displayed formula on the seventh line of the section.
- [12/24/2015] On page 411, in footnote 1, change  $\sigma Z(t)$  to  $\mu t + \sigma Z(t)$ .
- [5/22/2016] On page 419, 10 lines from the bottom, replace the sentence beginning “It is the limit” with  
It is the limit, as  $n$  goes to  $\infty$ , of a sum of  $n$  random variables each equal to  $\sqrt{t/n}$  with probability 0.5 and  $-\sqrt{t/n}$  with probability 0.5.
- [6/9/2016] On page 472, in the solution to exercise 20.17, on the fifth line, change  $\gamma t + \gamma Z(t)$  to  $e^{\gamma t + \gamma Z(t)}$ .
- [3/7/2016] On page 523, in the solution to exercise 24.11, replace the last 3 lines with

$$N(d_1) = 0.10620 \quad N(d_2) = 0.10456$$

$$\text{Call} = 0.97(0.96(0.10620) - 0.10456/1.03) = 0.00042431$$

The price for a loan of 100,000 is  $100,000(1.03)(0.00042431) = \boxed{43.70}$ .

- [6/15/2016] On page 553, delete footnote 1.
- [1/29/2016] On page 563, in Advantage 2 of the Cox-Ingersoll-Ross model, change  $2ab > \sigma^2$  to  $2ab > \bar{\sigma}^2$ .

- [11/4/2015] On page 568, in Example 26G, on the second line, add  $dt$  after  $(0.06 - r(t))$ .
- [11/16/2016] On page 728, in the solution to question 4, on the tenth line (the one for  $r$ ), change  $\ln(55/60)$  to  $\ln(55/50)$ .
- [7/18/2016] On page 823, in the solution to question 13, on the last line, change  $\Pr(\ln G(1) - \ln S(1)) > 0$  to  $\Pr(\ln G(1) - \ln S(1) > 0)$ .