(ii) Sum the two equations for $I(a,b)$ in part (i) and divide by 2 to obtain

$$I(a,b) = \frac{1}{2a}\int_0^\infty \left(a + \frac{b}{x^2}\right) \exp\left\{-ax^2 - \frac{b^2}{x^2}\right\} dx.$$

Make the change of variable $t = ax - b/x$ and show that

$$I(a,b) = \frac{\sqrt{\pi}}{2a} e^{-2ab}.$$

(Hint: Consider the normal density with mean zero and variance 1/2.)

(iii) Make the change of variable $x = t^{-1/2}$ in the definition of $g(\alpha)$ and conclude from (ii) that

$$g(\alpha) = \frac{2m}{\sqrt{2\pi}} I\big(m/\sqrt{2}, \sqrt{\alpha}\big) = e^{-m\sqrt{2\alpha}}.$$

Page 141, line 5 from bottom. Change f_{xx} to f_{tt}. The line should be

$$+f_{tx}\big(t, W(t)\big)\, dt\, dW(t) + \frac{1}{2} f_{tt}\big(t, W(t)\big)\, dt\, dt.$$

Page 144, line 6 from bottom. Change $0 \cdot \int_0^t |\Theta(u)|^2\, du = 0$ to $0 \cdot \int_0^t |\Theta(u)|\, du = 0$.

Page 146, line 12. Change (4.4.19) to (4.4.21).

Page 162, line 10 from bottom. Change $f(t, S(0))$ to $f(0, S(0))$.

Page 162, line 9 from bottom. Change text to "... set up a *static hedge*, which is a hedge that does not trade...."

Page 170, line 7. Insert $\frac{1}{2}$ before f_{yy}. The line should be

$$\frac{1}{2} f_{xx}\, dM_1\, dM_1 + f_{xy}\, dM_1\, dM_2 + \frac{1}{2} f_{yy}\, dM_2\, dM_2.$$

Page 187, line 11 from bottom. Change $\int_0^T \Delta^2(t)\, dW(t)$ to $\int_0^T \Delta(t)\, dW(t)$.

Page 187, line 8 from bottom. There is a dt missing in the integral. The line should be

$$\int_0^T \Delta^2(t)\, dt < \infty \text{ almost surely.}$$

Page 196, equation (4.10.20). The partial derivatives should be with respect to x, not s. The equation should be

$$c_t\big(t, S(t)\big) + rS(t) c_x\big(t, S(t)\big) + \frac{1}{2}\sigma^2 S^2(t) c_{xx}\big(t, S(t)\big) = rc\big(t, S(t)\big). \tag{4.10.20}$$

Page 200, line 1. A dt is missing in the equation. It should be $dB_i(t)\, dB_k(t) = \rho_{ik}(t)\, dt$.

Page 201, line 9. A dt is missing in the equation. It should be $dB_1(t)\, dB_2(t) = \rho(t)\, dt$.