Problem 2.1. (1 pt) Source: Problem 1.3.c. from McDonald.
ABC stock has a bid price of $40.95 and an ask price of $41.05. Assume there is a $20 brokerage commission. Suppose that you buy 100 shares, then immediately sell the 100 shares with the bid and ask prices being as above. What is your round-trip transaction cost?
(a) About $12.50 gain
(b) About $50.00 gain
(c) About $50.00 loss
(d) About $12.50 loss
(e) None of the above

Bill and Jane each sell a different stock short for a price of 1000. For both investors, the margin requirement is 50%, and interest on the margin is credited at an annual effective rate of 6%. Their respective brokers keep the short-sale proceeds (without crediting interest).
Bill buys back his stock one year later at a price of $P$. At the end of the year, just prior to the closing of the short sale, the stock paid a dividend of $X$.
Jane also buys back her stock after one year, at a price of ($P - 25$). At the end of the year, just prior to the closing of the short sale, her stock paid a dividend of $2X$.
Both investors earned an annual effective yield of 21% on their short sales. Calculate $P$.
(a) 800
(b) 825
(c) 850
(d) 875
(e) None of the above

Please, provide the complete solution to the following problems.

Problem 2.3. An investor buys 10 shares of a non-dividend paying stock for the initial price of $200 per share. At the end of the investment term sells the 10 shares for the market price of $205 per share. What is his/her simple return on this investment?

Problem 2.4. An investor buys 10 shares of stock which pays a continuous dividend with the dividend yield equal to 0.05. Assume continuous and immediate reinvestment of dividend into the same asset. How many shares does the investor own 2 years from the original purchase?

Problem 2.5. An investor buys $n_0$ shares of continuous-dividend-paying stock with the aim of owning exactly 10 shares three later. Assume that the dividend yield is equal to 0.02. Assume continuous and immediate reinvestment of dividend into the same asset. Calculate $n_0$. 