Please provide the answer attached only. You, the tutor have an option to select "**not to include in library**" in order to make this NOT visible to other students or experts. Please only accept this exercise help if you are okay with this. Thanks!

1. The price of a stock is $40. The price of a one-year European put option on the stock with a strike price of $30 is quoted as $7 and the price of a one-year European call option on the stock with a strike price of $50 is quoted as $5. Suppose that an investor buys 100 shares, shorts 100 call options, and buys 100 put options. Draw a diagram illustrating how the investor’s profit or loss varies with the stock price over the next year. How does the answer change if the investor buys 100 shares, shorts 200 call options, and buys 200 put options?
2. Employ an arbitrage argument to explain why an American option is always worth at least as much as: (a) a European option on the same asset with the same strike price and exercise date, and (b) its intrinsic value. For both parts (a) and (b) clearly state what strategy is employed to make a profit if the condition is not met.
3. Consider an exchange-traded call option contract to buy 1000 shares with a strike price of $50 and maturity in four months. Explain how the terms of the option contract change when there is: (a) a 25% stock dividend, (b) a 10% cash dividend, and (c) a 2-for-1 stock split.
4. The AAAA Company has 100,000 shares outstanding and 20,000 warrants outstanding.

Each warrant has a maturity of one year and gives the holder the right to buy one new share from AAAA Company for $50. Suppose the premium on a call option (on AAAA Co. stock) with a strike price of $50 and maturity of 1 year is $3. What is the market price for one warrant?