

2. Near market closing time on a given day, you lose access to stock prices, but some European call and put prices for a stock are available as follows:

Strike Price	Call Price	Put Price
\$40	\$11	\$3
\$50	\$6	\$8
\$55	\$3	\$11

All six options have the same expiration date.

After reviewing the information above, John tells Mary and Peter that no arbitrage opportunities can arise from these prices.

Mary disagrees with John. She argues that one could use the following portfolio to obtain arbitrage profit: Long one call option with strike price 40; short three call options with strike price 50; lend \$1; and long some calls with strike price 55.

Peter also disagrees with John. He claims that the following portfolio, which is different from Mary's, can produce arbitrage profit: Long 2 calls and short 2 puts with strike price 55; long 1 call and short 1 put with strike price 40; lend \$2; and short some calls and long the same number of puts with strike price 50.

Which of the following statements is true?

- (A) Only John is correct.
- (B) Only Mary is correct.
- (C) Only Peter is correct.
- (D) Both Mary and Peter are correct.
- (E) None of them is correct.