LAST NAME _____   FIRST NAME _____

For the entire quiz, assume interest rates are 5% per year for all maturities.

1. Renault stock is trading today at 60 €/share. Renault pays an annual dividend of 3 €/share. The next dividend will be paid in six months time. What is the no-arbitrage price of a futures contract on Renault with maturity one year?

☐ 58.90 €
☐ 59.00 €
☐ 59.93 €
☐ 60.00 €
☐ 63.00 €

2. The spot price of frozen orange juice today is 10 € per thousand pounds. The forward price for delivery of one thousand pounds of frozen orange juice in one year is 12 €. Storage costs of frozen orange juice are 1 € per thousand pounds per year to be paid at the beginning of the year. An arbitrage strategy involves:

☐ Buying f.o.j.* spot, selling f.o.j. forward
☐ Buying f.o.j. spot, buying f.o.j. forward
☐ Selling f.o.j. spot, selling f.o.j. forward
☐ Selling f.o.j. spot, buying f.o.j. forward
*f.o.j. stands for frozen orange juice

3. An American put option can be exercised

☐ by its buyer any time until expiry
☐ by its buyer only at expiry
☐ by its seller any time until expiry
☐ by its seller only at expiry

4. Tesla stock is trading today (t=0) at 350 $/share. Consider a European call option on Tesla with exercise (strike) price 360 $ and expiry in one year (t=1). What will be the payoff of a long position in the call at expiry (t=1) if Tesla stock trades at 365 $/share at expiry (t=1)?

☐ minus 15 $ ☐ 5 $
☐ minus 10 $ ☐ 10 $
☐ minus 5 $ ☐ 15 $
☐ 0 $

5. Tesla stock is trading today (t=0) at 350 $/share. Consider a European put option on Tesla with exercise (strike) price 360 $ and expiry in one year (t=1). What will be the payoff of a <u>short</u> position in the put at expiry (t=1) if Tesla stock trades at 365 $/share at expiry (t=1)?

☐ minus 15 $ ☐ 5 $
☐ minus 10 $ ☐ 10 $
☐ minus 5 $ ☐ 15 $
☐ 0 $

LAST NAME _____   FIRST NAME _____

For the entire quiz, assume interest rates are 5% per year for all maturities.

1. Renault stock is trading today at 60 €/share.
Renault pays an annual dividend of 3 €/share.
The next dividend will be paid in six months time.
What is the no-arbitrage price of a futures contract
on Renault with maturity one year?

☐ 58.90 €
☐ 59.00 €
☒ 59.93 €
☐ 60.00 €
☐ 63.00 €

F=(60 - 3 / 1.05^0.5) x 1.05 = 60 x 1.05 - 3 x 1.05^.05 = 59.93

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10 € per thousand pounds. The forward price for
delivery of one thousand pounds of frozen orange
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F(actual) = 12€/contract > F(no-arb) = (10 + 1) x 1.05 = 11.55 €/contract => sell F(actual), buy Synth-Forward
which involves buying f.o.j.

3. An American put option can be exercised

☒ by its buyer any time until expiry
☐ by its buyer only at expiry
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☐ minus 15 $ ☒ 5 $
☐ minus 10 $ ☐ 10 $
☐ minus 5 $ ☐ 15 $
☐ 0 $

C(T) = max{ S(T) - K, 0 } = max{ 365 - 360, 0 } = max{ 5, 0 } = 5 $

5. Tesla stock is trading today (t=0) at 350
$/share. Consider a European put option on
Tesla with exercise (strike) price 360 $ and
expiry in one year (t=1). What will be the
payoff of a short position in the put at expiry
(t=1) if Tesla stock trades at 365 $/share at
expiry (t=1)?

☐ minus 15 $ ☐ 5 $
☐ minus 10 $ ☐ 10 $
☐ minus 5 $ ☐ 15 $
☒ 0 $

P(T) = max{ K - S(T), 0 } = max{ 360 - 365, 0 } = max{ - 5, 0 } = 0