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## Call-put parity, Rainbow best-of-two

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Payoff relation:

$$\begin{aligned} (K - (S_1, S_2)^+, 0)^+ &= K \\ &- (S_1, S_2)^+ \\ &+ ((S_1, S_2)^+ - K, 0)^+ \end{aligned}$$

Option price relation:

$$\begin{aligned} P(S_1, S_2, K) &= e^{-rT} K \\ &- C(S_1, S_2, 0) \\ &+ C(S_1, S_2, K) \end{aligned}$$

The value of a put option on the maximum of two assets equals the strike, minus the zero-call option on the maximum of two assets, plus the call on the maximum of two assets.

### Symbol list:

K	Strike
r	Continuous compounded interest rate
T	Time till expiration
$S_1$	First asset
$S_2$	Second asset
$(a, b)^+$	The maximum of a and b
$(S_1, S_2)^+$	Payoff of a zero strike call on the maximum of two assets
$(K - (S_1, S_2)^+, 0)^+$	Payoff of the put on the maximum of two assets
$((S_1, S_2)^+ - K, 0)^+$	Payoff of a call on the maximum of two assets
$P(S_1, S_2, K)$	Rainbow put option with strike K
$C(S_1, S_2, K)$	Rainbow call option with strike K