# PPC Calculation for Top American Burger Chains (Vickrey Auction Principle)

This document outlines the Pay-Per-Click (PPC) calculations for the top four American burger chains using the Vickrey auction principle. The PPC for each bidder is determined by calculating the minimum bid required to maintain their position based on Quality Score (QS), which is calculated as: QS = Bid \* Click-Through Rate (CTR) \* 1000.

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| Bidder | Inequality Formula | P | P + .01 | PPC |
| Burger King | P × 0.089 × 1000 ≥ 0 | 0 | 0.01 | $0.01 |
| Wendy's | P × 0.051 × 1000 ≥ 1,157 | 22.70 | 22.71 | $22.71 |
| White Castle | P × 0.066 × 1000 ≥ 1,530 | 23.18 | 23.19 | $23.19 |
| McDonald's | P × 0.088 × 1000 ≥ 1,650 | 18.75 | 18.76 | $18.76 |