RANKING:

a, b
c

$a \sim b \Leftrightarrow (a \succsim b) \wedge (b \succsim a)$

$a \succ c \Leftrightarrow (a \succsim c) \wedge \neg(c \succsim a)$

$b \succ c \Leftrightarrow (b \succsim c) \wedge \neg(c \succsim b)$

$u(a) = u(b) = 2, \; u(c) = 1$

$u(a) = u(b) = 512, \; u(c) = -15$

TRANS $\Rightarrow$ EXISTENCE OF MAX. ACT.:

PROOF BY CONTRADICTION

$x_1 < x_2 < \ldots < x_i < x_{i+1} < \ldots < x_i \overset{\text{TRANS}}{\Rightarrow} x_i > x_i$ ↯

$a < b < c < a$ MONEY PUMP

SPORTS < SUV < SEDAN < SPORTS