

Utility Maximization Exercises

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Exercise 1

Maximize the utility function $u(x, y) = x^{1.5}y^{0.5}$ given the following constraints:

- Income: $I = 300$
- Price of good x : $p_x = 10$
- Price of good y : $p_y = 5$

Exercise 2

Maximize the utility function $u(x, y) = 3x^2y$ given the following constraints:

- Income: $I = 180$
- Price of good x : $p_x = 6$
- Price of good y : $p_y = 3$

Exercise 3

Maximize the utility function $u(x, y) = 4x^{0.7}y^{0.3}$ given the following constraints:

- Income: $I = 420$
- Price of good x : $p_x = 7$
- Price of good y : $p_y = 4$