Definitions
1. Strategy: A strategy is an information-contingent plan of action: that is, it defines what a player would do under any possible circumstances, even for decisions that won't be reached.
2. Best Response: the strategy that gives you the highest utility (payoff).
3. Best Response Function
   a. The best response function maps the state of the world to your best response.

Choose a Project

Assume the role of the manager of a research division of an organization in the biomedical/health sector. Below is data on ratings from a third-party scientific panel regarding potential research projects you could fund. Each proposal has received a rating on a scale from 1 to 5 (with 5 being the top rating) by seven scientific experts unaffiliated with the projects under consideration. All have the same cost.

- The only information you have on the project is the expert rating
- Assume at least one of the experts is correct with an equal probability on each.
- The higher the project is rated, the higher your utility as a manager.
  U = project rating
- The strategies in this example are the possible projects to fund
- The best response, in this case, is funding the project with the highest expected utility

Reviewer	Project A	Project B
1	2	3
2	2	3
3	2	2
4	2	2
5	2	2
6	5	5
7	4	5

E(A) = 1/7*2 +1/7*2 +1/7*2 +1/7*2 +1/7*2 +1/7*5+1/7*4= 2.71
E(B) = 1/7*3 +1/7*3 +1/7*2 +1/7*2 +1/7*2 +1/7*5+1/7*5= 3.14

The best response is project B.

Choose a Bundle
You have w dollars to spend on two things that make you happy. The quantity of the first thing is represented by x, and the quantity of the second thing is represented by y.

Given prices p_x and p_y and an allowance w, set up the maximization problem.

$$Max_{\{x,y\}} U(x, y) \qquad st \qquad p_x * x + p_y * y \leq w$$

Example: you substitute between two goods x and y. A single unit of x provides five times the utility as y.
$$u(x, y) = 5x + y$$

Rank preference over the following bundles {x,y}
$$A= \{7,1\} \qquad B= \{1,7\} \qquad C= \{8,1\} \qquad D = \{4,6\} \qquad E = \{6,3\}$$

Find the best response given px = 5, py = 10, and w = 50.
{10,0}