Solution to Homework 6

Question. Assuming that utility is proportional to the square root of money amount, would a person prefer \$64 without any condition or \$144 with probability 0.5?

Answer. According to decision theory, a person prefers an alternative with the largest utility.

- For the first alternative, the utility is $u_1 = \sqrt{64} = 8$ units.

- For the second alternative, the utility is

$$u_1 = 0.5 \cdot u(144) + 0.5 \cdot u(0) = 0.5 \cdot \sqrt{144} + 0.5 \cdot \sqrt{0} = 0.5 \cdot 12 + 0.5 \cdot 0 = 6.$$

The first utility is larger, so the person will prefer to get \$64 without any condition.