

# Instructions [DP]

**Welcome!** This is a decision making experiment. Each participant is paid \$10 for attending. Throughout this experiment you will also earn points based on the decisions you make. The rate at which we exchange your points into cash will be 50 points = \$1

Please turn off your electronic devices, remain silent and do not look at other participants' screens. If you have any questions, or need assistance of any kind, please raise your hand and we will come to you. If you disrupt the experiment by talking, laughing, etc., you may be asked to leave without compensation. We expect and appreciate your cooperation today.

## THE EXPERIMENT

The experiment is divided into three parts: (i) task 1, (ii) task 2, and (iii) a questionnaire. In each of the three parts, you will make choices which affect the number of points you earn over the course of the experiment. You will not see the results for task 1 and task 2 until you have completed both tasks. In the last part you will be asked to answer three questions, where for each correct answer you will have an opportunity to earn 25 points. At the end of the experiment, the screen will display how many points you have earned and your final cash payment. Lastly, you will be asked to complete a brief survey.

Prior to playing for points, you will have an opportunity to practice making similar decisions before each task. After the practice rounds, you will complete a quiz to test your understanding of the task.

## TASK 1

You are asked to form an investment plan, for each possible outcome, using an initial wealth of 100. The wealth can be invested in either (i) a risky investment **A**, whose price can either increase or decrease, or (ii) a risk-free alternative **B**, whose price will remain constant. You have to choose how to allocate your wealth between asset **A** and asset **B** for each possible price change of **A**. Your investment plan will look similar to the one in Figure 1.1. Please note that the numbers in Figure 1.1 are not necessarily representative of the ones you will see during the actual task.

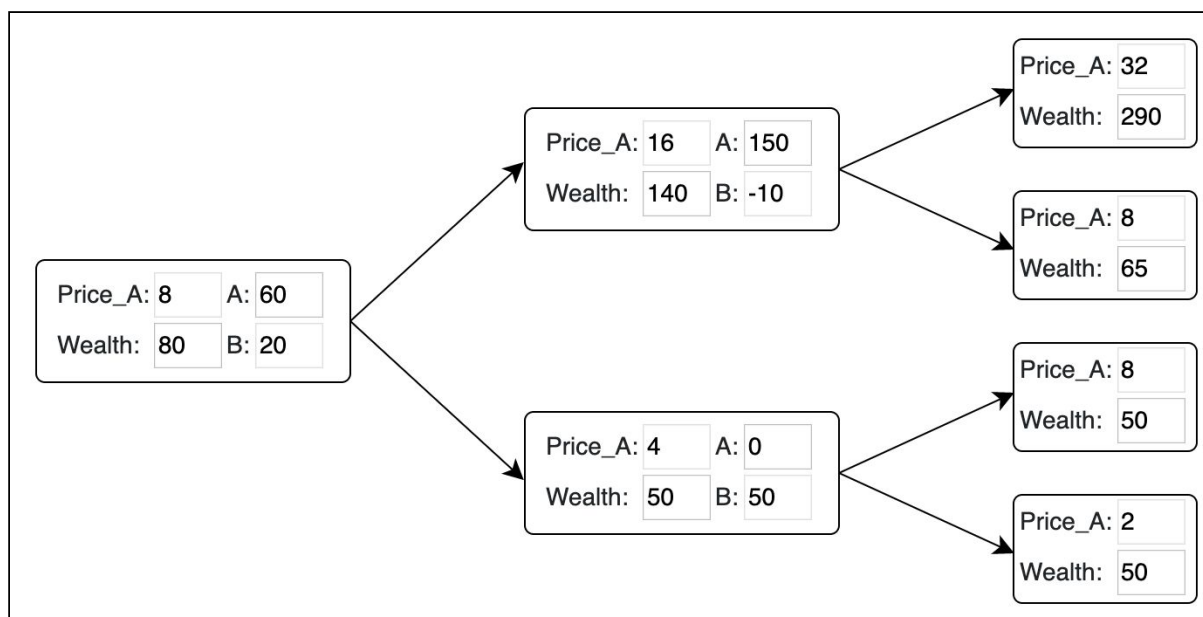


FIGURE 1.1

Figure 1.1 illustrates a game with three decision nodes, which lead to 4 possible outcomes. The first node, on the left side, is the initial node where you will make your first decision about how to allocate your initial wealth between **A** and **B**. Should you choose to allocate all your wealth to **B**, it would be equivalent to keeping your initial wealth constant, as there is no risk (and no gain).

In the actual task, you will play two extended versions of Figure 1.1: (i) one with 8 possible outcomes and (ii) one with 16 possible outcomes. The rules are exactly the same in each version. For simplicity, we will use examples from a 3-node decision task which leads to 4 outcomes.

In Figure 1.1 you need to make 3 investment decisions (at the three nodes), which lead to four possible outcomes (4 terminal nodes). Each decision node will display information about: 1) the price of **A**, 2) your current wealth at that node, 3) the amount of wealth invested in **A**, and 4) the amount of wealth invested in **B**. The four terminal nodes provide information on the final price of **A**, and your final wealth. Each of the four outcomes is equally likely to occur and will be randomly selected by the computer.

The initial price of **A** is 8, which can either double or decrease by half with 50 percent probability (a coin flip). If the price of **A** increases, then you move to the upper node where the price is 16 and the wealth that you allocated to **A** doubles. If the price decreases, then you move to the lower node where the price is 4 and the wealth you allocated to **A** decreases by half. The value of the wealth you invest in **A** will change from one node to the next proportionally with the direction of the price of **A** (it will double or decrease by half).

In either scenario, the wealth allocated to **B** will remain the same. For example, if you invest 80 in **B**, then your wealth will still be 80 at the next node, regardless of whether you moved up (because the price of **A** went up) or down (because the price of **A** went down).

Once you decide how much wealth to allocate to **A**, at every decision node other than the terminal nodes, the computer will automatically allocate to **B** an amount of wealth equal to the difference between your current wealth and the amount allocated to **A**. That is,

$$\mathbf{B} = \text{Wealth} - \mathbf{A}$$

The wealth allocated to **B** can be negative if you enter an amount for **A** that is higher than your current wealth. This means that you borrow from **B** and invest it in **A**. You can also enter a negative value for **A**, which will make the value of **B** greater than your current wealth. Similarly, this means that you are borrowing from **A** to invest in **B**.

Consider the following examples:

1. If your initial wealth is 80, and you invest 40 in **A** and 40 in **B**, then in the next period (i) if the price of **A** goes up, you will earn 80 from **A** and 40 from **B** for a combined wealth of 120, or (ii) if the price of **A** goes down, you will earn 20 from **A** and 40 from **B** for a combined wealth of 60.
2. If your initial wealth is 80, and you invest 120 in **A** and -40 in **B**, then at the next node if the price of **A** (i) increases, your wealth be 200 (240 from **A** and -40 from **B**), or (ii) decreases, your wealth will be 20 (60 from **A** and -40 from **B**).
3. If your initial wealth is 80, and you invest -40 in **A** and 120 in **B**, then at the next node your wealth will either decrease to 40 (if the price of **A** increases, now you owe 80 instead of 40) or increase to 100 (if the price of **A** decrease by half, because now you owe 20 instead of 40).

You can invest more than your current wealth in either **A** or **B** as long as your next-period wealth does not go below zero. If at any node you invest too much in either asset, so that the resulting wealth is negative at the subsequent node, the computer will not allow you to submit such plan and an error message will pop up on your screen.

Once you have completed your plan, you can submit it by clicking on the “Next” button on your screen. The computer will generate a “coin flip” for every node to determine whether the price of **A** increased or decreased at that node. Recall that

at each node the price is equally likely to go up or down. The random sequence of “coin flips” generated by the computer will determine your final outcome. Your final wealth, which is the amount of points you earn in this task, will contribute to your final cash payment.