# A Stream of Prospects or a Prospect of Streams: On the Evaluation of Intertemporal Risks Pre-Analysis Plan 

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[^0]
## 1 Introduction

The goal of this experiment is to clarify some of the results contained in Andreoni, Feldman and Sprenger (2017) ${ }^{1}$, which provided experimental evidence that risk preferences are evaluated first under a specific functional form of discounted non-expected utility. The result which we wish to explore is the increase in risk aversion when compounding of lotteries is done for our subjects. This result, if robust across task, could not be explained by the models considered. We propose herein a pre-analysis plan to replicate and augment some of our experimental tasks with this hypothesis in mind, in order to confirm that our results are indicative of a robust phenomenon.

## 2 Experiment Design, Hypotheses, and Power

### 2.1 Design Overview

As this is a very similar to the design of our original experiment Andreoni et al. (2017), we will be relatively brief in our description of the experiment. A more thorough description of the design is contained in Andreoni et al. (2017). Moreover, a full set of instructions from this experiment are contained in Appendix A below. The experiment has four stages. Each stage with either two or three tasks. Each task has 30 decisions. For every task, subjects must decide between Option A and Option B. Option A and Option B are different distributions over a monetary prize in a week and $\$ 19$ in four weeks. Option

[^1]A is always the same for all decisions within a task and Option B increases the likelihood of higher monetary payoffs as the subject moves down the list. Each task elicits probability equivalents for Option B.

The main distinction between the tasks are the fixed chance of $\$ 10$ in a week for Option A, the common likelihood of $\$ 19$ in four weeks and whether reduction of compound lotteries across time dated commodities is done for the subjects. The first two differences are illustrated in Table 2. This leads to a $2 \times 2 \times 2$ design. Both initial stages also consider the case where there is no chance of $\$ 19$ in four weeks. Since there is only a single period for payoffs, compounding across time periods would result in the same decisions. Therefore, these tasks are omitted for the compounded tasks and only appears in the non-compounded tasks.

| Tasks |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Chance of \$19 in a week |  |  |
| Chance of $\$ 10$ in a week | $90 \%$ chance | $10 \%$ chance | $0 \%$ chance |
| $100 \%$ chance | $2(\mathrm{nc}), 7(\mathrm{c})$ | $3(\mathrm{nc}), 8(\mathrm{c})$ | 1 |
| $95 \%$ chance | $5(\mathrm{nc}), 9(\mathrm{c})$ | $6(\mathrm{nc}), 10(\mathrm{c})$ | 4 |

Note: No time compounding (nc) and time compounding (c) done for subjects.
We also want to randomize the order in which our subjects see the previous tasks, while keeping related tasks together. For this purpose we split the previous tasks into 4 blocks: block 1 is tasks $1-3$, block 2 is tasks $4-6$, block 3 is tasks $7-8$, and block 4 is tasks $9-10$. Hence, subjects in our expriment will be exposed to 4 different block order: 1234, 3421, 2143 and 4321.

### 2.2 Hypotheses and Analyses

Following the theory laid out in Andreoni et al. (2017), we will be evaluating whether agents follow the predictions of discounted cumulative prospect theory and whether they evaluate the time or the risk dimension first. $\mathrm{Cu}-$ mulative prospect theory (CPT) was introduced by Tversky and Kahneman (1992) and then the time-first model was axiomatized by Chew and Epstein (1990). Our goal is to investigate whether the moderate directional increases in risk aversion we obtained in our previous study are due to the lotteries considered, in line with time first, or whether this is just a consequence of doing the compounding for our subjects, which would not be in line with any of the models considered.


Figure 1: Theoretical Predictions

If subjects behave according to time-first (Epper and Fehr-Duda, 2015), then we expect a much larger differential response from the $100 \%$ chance of ten dollars than from the $95 \%$ chance. I.e. their risk aversion should increase from task 1 to task 7 when compared to task 1 to task 2 ; however, there should be no perceivable difference in their behavior between their increase in risk aversion from task 4 to task 9 when compared to the increase in risk aversion from task 4 to task 5 . Moreover, differences between tasks 8 and 7 should be larger than between tasks 3 and 2 but a smaller change should happen between tasks 10 and 9 and tasks 6 and 5 . In addition, no perceivable change is predicted between tasks 1 and 3 and tasks 1 and 8 but their should be one between tasks 4 and 6 and tasks 4 and 10. Any of these unpredicted changes would be a consequence of increased risk aversion brought on by the compounding and not a prediction of any of the models considered.

Our predictions are illustrated in Figure $1^{2}$. Using parameters and the theory from Andreoni et al. (2017) we can calculate the expected responses under the time and the risk first CPT models. For our experimental treatment we will not be re-eliciting the inverse-s shape weighting parameters, as our results are robust to various specifications and measurement was fairly stable across subjects; nevertheless, we will calculate risk aversion parameters at the individual level in a matter similar to the one outlined in Andreoni et al. (2017).

[^2]
### 2.3 Power Calculations: Sample Size

Using our results from our original experiment, we can get a estimate of the sample size required for an adequately powered test, i.e. one that minimizes the chance of type II errors. Our previous results indicate that $58.33 \%$ subjects directionally increased their risk aversion from task 1 to task 7 while $27.08 \%$ subjects directionally increased their risk aversion from task 1 to task 2. Similarly, but to a lesser extent we find that $47.92 \%$ directionally increased when compared to $36.81 \%$ when comparing tasks 1 and 3 and 1 and 8 respectively. Moreover, we find that $47.92 \%$ increased compared to $28.47 \%$ in the comparisons between tasks 3 and 2 with tasks 8 and 7 . The other differences where not present in our previous study. Given these differences in behavior we can conduct a power test of differences in proportions.

Following the methodology outlined in Cohen (1988) and using the power package Champely (2018) in R Core Team (2017) we can compute the necessary sample to find a similarly sized effect. In particular, we use a test of two proportions $\left(p_{1}, p_{2}\right)$. First, we compute the test statistic using the following formula from Cohen (1988):

$$
h=2 \cdot \arcsin \sqrt{p_{1}}-2 \cdot \arcsin \sqrt{p_{2}}
$$

which controls for the fact that the specific location on the $[0,1]$ interval can have an effect on detectability of the differences in proportions. Further, using convention, we use a significance level of .05 and .8 as the probability of type II error. Because we are mostly interested in how risk aversion directionally increases in the time-compounded task we use a one-sided test.

Using the three differences outlined above we find that our desired sample sizes are $N_{1}=30, N_{2}=244$ and $N_{3}=75$, respectively.

All of this suggests that subjects would leave us adequately powered to test our hypothesis of interest assuming the true effect size of a change of the proportion of subjects who are risk averse is similar to our previous results. To hedge uncertainty and opting for caution we propose a total sample of 90-96 subjects which should yield a significant difference in most of our treatments.

## References

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# Instructions 

Please read carefully

Participant Number:
Hello and Welcome.

## ELIGIBILITY FOR THIS STUDY:

To be eligible for this study, you must have a bank account that can receive payments through Chase Quickpay ${ }^{\circledR}$. This bank account must be a valid way for you to receive payments from now through the next four weeks.

The value and timing of payments you will receive will be determined by your decisions in this study, and by chance. The soonest you could be sent a payment is in a week. The latest you could be sent a payment is four weeks from today. If you do not meet all of these criteria, please inform us of this now.

## PLEASE WRITE IN PRINT AND CLEARLY:

## NAME

EMAIL (For CHASE Quickpay®)

## Earning Money:

You will receive a $\$ 10$ participation payment. This payment will be split in two and sent to you at two different dates. You will be sent $\$ 5$ in one week and another $\$ 5$ in four weeks. These payments are independent of any other payments you receive from this study.

In this study, you will complete 10 different tasks. Each Task asks you to make a series of decisions between two options, OPTION A and OPTION B. The different options provide different values of payments sooner, sent in one week, and later, sent in four weeks. For each Decision, all you have to do is decide whether you prefer OPTION A or OPTION B.

It is important to note that the payments in this study may involve chance. There may be a chance that your sooner payment, your later payment or both will not be sent at all. For each Decision, you will be fully informed of the chance of the sooner and later payments. You will also be fully informed about how each chance will be determined for each Task and each Decision. Whether or not your payments will be sent will be determined at the END of the study today.

Once all decisions have been made, we will randomly select one Task and one Decision as the decision-that-counts. This will be done in two stages. First, we will pick a number from 1 to 10 at random to determine which is the task-thatcounts. Then we will pick a second number at random from 1 to 30 to determine which Decision in the task-that-counts will be the decision-that-counts. We will use your choice in the decision-that-counts to determine your actual earnings.

Note, since all decisions are equally likely to be chosen, you should make each Decision as if it will be the decision-that-counts.

IMPORTANT: All payments will be sent to your bank account through Chase Quickpay®. On the scheduled day, the payment will be sent online by Professor Sprenger and his assistants.

As a reminder to you, the day before you are scheduled to be sent one of your payments, we will send you an e-mail notifying you that the payment will be sent. On your desk is a business card for Professor Sprenger with his contact information. Please keep this in a safe place. If one of your payments is not received you should immediately contact Professor Sprenger, and we will hand-deliver payment to you.

Your Identity: In order to receive payment, we will need to collect your name and email address. This information will only be seen by Professor Sprenger and his assistants. As soon as your payments are registered today, the link between the choices you make and your payments will be destroyed. The page with your name and email address will be removed and shredded. Your identity will not be a part of any subsequent data analysis. You have, instead, received an anonymous participant number on the card on your desk that we will use for our analysis.

## How it Works:

In this study you will complete 10 Tasks. Each task asks you to make 30 decisions between two options. The first option will always be called OPTION A. The second option will always be called OPTION B. Each Decision you make is a choice. For each Decision, all you have to do is decide whether you prefer OPTION A or OPTION B.

Throughout the tasks, either OPTION A, OPTION B or both will involve chance. You will be fully informed of the chances involved for every Decision. For this study, choices will be between various chances of a positive amount or zero. Options may have more than one chance of receiving a positive amount.

Once we know which is the decision-that-counts, and whether you prefer OPTION A or OPTION B, we will then determine the value of your payments. If you prefer OPTION A in the decision-that-counts, then OPTION A will be implemented. If you prefer OPTION B, then OPTION B will be implemented.

For example, consider the following two OPTIONS:

## EXAMPLE

|  | Option A |  |  | or | Option B |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$10 in a week | \$20 in 4 weeks |  |  | $\$ 20$ in a week Chance 1 | \$20 in 4 weeks |  |
|  | Chance 1 | Chance 2 |  |  |  | Chance 2 |  |
| 1) | 70 in 100 | 90 in 100 | $\square$ | or | 35 in 100 | 90 in 100 | $\square$ |
|  | Chance | Chance |  |  | Chance | Chance |  |
|  | u prefer Option A | check the green |  |  |  |  |  |
| 1) | 70 in 100 | 90 in 100 | $\square$ | or | 35 in 100 | 90 in 100 | $\square$ |
|  | Chance | Chance |  |  | Chance | Chance |  |
|  | ou prefer Option B | check the blue bo |  |  |  |  |  |
| 1) | 70 in 100 | 90 in 100 | $\square$ | or | 35 in 100 | 90 in 100 | $\square$ |
|  | Chance | Chance |  |  | Chance | Chance |  |

If this was chosen as the decision-that-counts, four pairs of ten-sided dice would be rolled. One pair of dice would be rolled for Chance 1 of Option A, one pair for Chance 2 of Option A, one pair for Chance 1 of Option B, and one pair for Chance

2 of Option B. The rolls of these dice will determine the values of payments sent in one week and in four weeks for those preferring Option A and those preferring Option B.

For each pair of dice, the first roll will correspond to the ten's digit, while the second roll will determine the one's digit. For example, rolling a 7 and then a 3 would mean rolling a 73 . Rolling $0-0$ will count as 100 . If the chance of receiving a given amount is greater than or equal to the rolled number, then the corresponding amount will be sent at the given date in addition to the $\$ 5$ participation payment. If the chance of receiving a given amount is lower than the rolled number, the corresponding amount would not be sent and only the $\$ 5$ participation payment would be sent. For example, if the chance of receiving a given payment was 90 in 100 , any dice roll from $0-1$ to $9-0$ will result in the payment being sent, while any dice roll from 9-1 to $0-0$ will result in the payment not being sent.

In the example above, if you preferred OPTION B we would roll two pairs of dice for Chance 1 and Chance 2. If the pair for Chance 1 read 4-7 and the pair for Chance 2 read 6-5, what payments would be sent (don't forget your participation payments)?

For Chance 1 you have a 35 in 100 chance of receiving $\$ 20$ in one week. Because 47 is larger than 35 , the $\$ 20$ would not be received and you would be sent $\$ 0+$ $\$ 5$ participation payment $=\$ 5$ in one week. For Chance 2 you have a 90 in 100 chance of receiving $\$ 20$ in four weeks. Because 65 is smaller than or equal to 90 , the $\$ 20$ would be received and you would be sent $\$ 20+\$ 5$ participation payment $=\$ 25$ in four weeks.

In the example above, if you preferred OPTION A we would roll two pairs of dice for Chance 1 and Chance 2. If the pair for Chance 1 read $6-8$ and the pair for Chance 2 read 9-8, what payments would be sent (don't forget your participation payments)?

In one week: In four weeks:

## Things to Remember:

- You must have a valid mailing address and bank account.
- You will receive your payment electronically for this study via Chase Quickpay®.
- You will receive a $\$ 10$ participation payment. This payment will be split in two. $\$ 5$ will be sent in one week. $\$ 5$ will be sent in four weeks. These payments are independent of the choices you make today.
- You will complete 10 tasks.
- Each Task asks you to complete a series of decisions between OPTION A and OPTION B. The different options provide different values of payments sooner, sent in one week, and later, sent in four weeks. All you have to do is state whether you prefer OPTION A or OPTION B.
- In each Task OPTION A, OPTION B or both may involve chance. You will be fully informed of the chances for each option.
- Options may have more than once chance of receiving a positive amount.
- Once all of your decisions have been made, we will choose one Task and one Decision as the decision-that-counts and will implement your preferred option.
- Every Decision is equally likely to be the decision-that-counts. So, it is in your interest to treat each Decision as if it could be the one that determines your payments.
- For the decision-that-counts, your payments may be determined by chance through the roll of four pairs of ten-sided dice. If a given chance payment will not be received, you will only receive the $\$ 5$ participation payment on the given date.


## TASK BLOCK A

## Participant Number:

## TASKS A:1-3

In the following 3 tasks you are asked to make a series of decisions between two Options that might involve more than one chance of a positive dollar amount: Option A and Option B. Each page will have a verbal explanation of the choices you are making. You may complete the tasks in any order you wish. For each row, all you have to do is decide whether you prefer Option A or Option B. Indicate your preference by checking the corresponding box.

Remember, each decision could be the decision-that-counts. So, it is in your interest to treat each decision as if it could be the one that determines your payments.

## TASK 1

On this page you will make a series of decisions between two options. Option A will be a Chance: 100 in 100 chance of $\$ 10$ in a week. Initially Option B will be a Chance: 5 in 100 chance of receiving $\$ 20$ in a week. As you proceed, Option A will stay the same while Option B will change. The chance that you receive $\$ 20$ in a week will increase. For each row, decide whether you prefer Option A or Option B.

|  | $\begin{gathered} \text { Option A } \\ \$ 10 \text { in a week } \\ \text { Chance } \end{gathered}$ | $\$ 20$ in a week Chance |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | or | 0 in 100 <br> Chance | $\square$ |
| 1) | $\begin{array}{ll} 100 \text { in } 100 \\ \text { Chance } \end{array} \quad \square$ | or | 5 in 100 <br> Chance | $\square$ |
| 2) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 10 in 100 <br> Chance | $\square$ |
| 3) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 13 in 100 Chance | $\square$ |
| 4) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 16 in 100 <br> Chance | $\square$ |
| 5) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 19 in 100 Chance | $\square$ |
| 6) | $\begin{array}{ll} 100 \text { in } 100 \\ \text { Chance } \end{array} \quad \square$ | or | 22 in 100 <br> Chance | $\square$ |
| 7) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | or | 25 in 100 Chance | $\square$ |
| 8) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 28 in 100 Chance | $\square$ |
| 9) | 100 in 100 Chance $\square$ | or | 31 in 100 Chance | $\square$ |
| 10) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | or | 34 in 100 Chance | $\square$ |
| 11) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | or | 37 in 100 Chance | $\square$ |
| 12) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 40 in 100 <br> Chance | $\square$ |
| 13) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 43 in 100 <br> Chance | $\square$ |
| 14) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 46 in 100 <br> Chance | $\square$ |
| 15) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 49 in 100 <br> Chance | $\square$ |
| 16) | $\begin{array}{ll} 100 \text { in } 100 \\ \text { Chance } \end{array} \quad \square$ | or | 52 in 100 <br> Chance | $\square$ |
| 17) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 55 in 100 Chance | $\square$ |
| 18) | $\begin{gathered} 100 \text { in } 100 \\ \text { Chance } \end{gathered}$ | or | 58 in 100 <br> Chance | $\square$ |
| 19) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | or | 61 in 100 Chance | $\square$ |
| 20) | $\begin{gathered} 100 \text { in } 100 \\ \text { Chance } \end{gathered}$ | or | 64 in 100 Chance | $\square$ |
| 21) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | or | 67 in 100 Chance | $\square$ |
| 22) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 70 in 100 Chance | $\square$ |
| 23) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 73 in 100 <br> Chance | $\square$ |
| 24) | 100 in 100 <br> Chance | or | 76 in 100 Chance | $\square$ |
| 25) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 79 in 100 Chance | $\square$ |
| 26) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 82 in 100 <br> Chance | $\square$ |
| 27) | 100 in 100 <br> Chance | or | 85 in 100 <br> Chance | $\square$ |
| 28) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 88 in 100 <br> Chance | $\square$ |
| 29) | 100 in 100 Chance | or | 91 in 100 Chance | $\square$ |
| 30) | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 94 in 100 Chance | $\square$ |
|  | $\begin{aligned} & 100 \text { in } 100 \\ & \text { Chance } \end{aligned} \quad \square$ | or | 100 in 100 <br> Chance | D |

## TASK 2

On this page you will make a series of decisions between two options. Option A will be Chance 1: 100 in 100 chance of $\$ 10$ in a week and Chance 2: 90 in 100 chance of receiving $\$ 19$ in 4 weeks. Initially Option B will be Chance 1: 5 in 100 chance of receiving $\$ 20$ in a week and Chance 2: 90 in 100 chance of receiving $\$ 19$ in 4 weeks. As you proceed, Option A will stay the same while Option B Chance 1 will change. The chance that you receive $\$ 20$ in a week will increase. Option B Chance 2 does not change. For each row, decide whether you prefer Option A or Option B.


## TASK 3

On this page you will make a series of decisions between two options. Option A will be Chance 1: 100 in 100 chance of $\$ 10$ in a week and Chance 2: 10 in 100 chance of receiving $\$ 19$ in 4 weeks. Initially Option B will be Chance 1: 5 in 100 chance of receiving $\$ 20$ in a week and Chance 2: 10 in 100 chance of receiving $\$ 19$ in 4 weeks. As you proceed, Option A will stay the same while Option B Chance 1 will change. The chance that you receive $\$ 20$ in a week will increase. Option B Chance 2 does not change. For each row, decide whether you prefer Option A or Option B.


## TASK BLOCK B

## Participant Number:

## TASKS B:1-3

In the following 3 tasks you are asked to make a series of decisions between two Options that might involve more than one chance of a positive dollar amount: Option A and Option B. Each page will have a verbal explanation of the choices you are making. You may complete the tasks in any order you wish. For each row, all you have to do is decide whether you prefer Option A or Option B. Indicate your preference by checking the corresponding box.

Remember, each decision could be the decision-that-counts. So, it is in your interest to treat each decision as if it could be the one that determines your payments.

## TASK 1

On this page you will make a series of decisions between two options. Option A will be a Chance: 95 in 100 chance of $\$ 10$ in a week. Initially Option B will be a Chance: 5 in 100 chance of receiving $\$ 20$ in a week. As you proceed, Option A will stay the same while Option B will change. The chance that you receive $\$ 20$ in a week will increase. For each row, decide whether you prefer Option A or Option B.


## TASK 2

On this page you will make a series of decisions between two options. Option A will be Chance 1: 95 in 100 chance of $\$ 10$ in a week and Chance 2: 90 in 100 chance of receiving $\$ 19$ in 4 weeks. Initially Option B will be Chance 1: 5 in 100 chance of receiving $\$ 20$ in a week and Chance 2: 90 in 100 chance of receiving $\$ 19$ in 4 weeks. As you proceed, Option A will stay the same while Option B Chance 1 will change. The chance that you receive $\$ 20$ in a week will increase. Option B Chance 2 does not change. For each row, decide whether you prefer Option A or Option B.


## TASK 3

On this page you will make a series of decisions between two options. Option A will be Chance 1: 95 in 100 chance of $\$ 10$ in a week and Chance 2: 10 in 100 chance of receiving $\$ 19$ in 4 weeks. Initially Option B will be Chance 1: 5 in 100 chance of receiving $\$ 20$ in a week and Chance 2: 10 in 100 chance of receiving $\$ 19$ in 4 weeks. As you proceed, Option A will stay the same while Option B Chance 1 will change. The chance that you receive $\$ 20$ in a week will increase. Option B Chance 2 does not change. For each row, decide whether you prefer Option A or Option B.


TASK BLOCK C

Participant Number:

TASKS C:1-2




extra decimal is required because some of the payments occur with only a small chance.
Note that the values of the payments in each option are ordered from highest to lowest value. This corresponds to the order with which
the dice rolls apply to payment values. The highest value will be received if the dice roll lands between 0 and the given chance. In this case
for Option A there is a 10 in 100 chance of receiving $\$ 10$ in one week and $\$ 19$ in 4 weeks . So, if the dice's roll landed between 0-0-1 and
$1-0-0, \$ 10$ would be received in one week and $\$ 19$ would be received in 4 weeks. The second highest value will be received, i.e. $\$ 10$ in a week
and $\$ 0$ in 4 weeks, if the dice's roll lies above the cutoff for the highest value with the appropriate chance.
Now, consider the case for Option B. The highest value is $\$ 20$ in a week and $\$ 19$ in four weeks, which has a .5 in 100 chance. Therefore, if
the dice's roll landed between $0-0-1$ and $0-0-5, \$ 20$ would be received in a week and $\$ 19$ in four weeks. If instead, the dice landed between
$0-0-6$ and $0-5-0$ (a 4.5 in 100 chance) $\$ 20$ would be received in a week, the second highest value. Alternatively, if the dice landed between
$0-5-1$ and 1-4-5 (a 9.5 in 100 chance) $\$ 19$ would be received in four weeks, the third highest value. Finally, if the dice landed between $1-4-6$
and $0-0-0$ (a 85.5 in 100 chance) $\$ 0$ would be received in a week and $\$ 0$ in four weeks, the lowest value.
The other task in this block is similar. Please take a look at all the tasks and raise your hand if you have any questions.
Remember, each decision could be the decision-that-counts. So, it is in your interest to treat each decision as if it could be the one that
determines your payments.
TASK 1
On the next page you will make a series of decisions between two options. Option A will be 90 in 100 chance of $\$ 10$ in a week and $\$ 19$ in four weeks with a 10 in
100 chance of receiving $\$ 10$ in a week and $\$ 0$ in four weeks. Note, unlike previous tasks, you get either $\$ 10$ in a week and $\$ 19$ in four weeks or $\$ 10$ in a week and $\$ 0$
in four weeks. Initially Option B will be a 4.5 in 100 chance of receiving $\$ 20$ in a week and $\$ 19$ in four weeks, .5 in 100 chance of receiving $\$ 20$ in a week and $\$ 0$ in
four weeks and 85.5 in 100 chance of $\$ 0$ in a week and $\$ 19$ in four weeks. Again, you only receive one out of $\$ 20$ in a week and $\$ 19$ in four weeks, $\$ 20$ in a week or $\$ 0$
in a week, $\$ 0$ in a week and $\$ 19$ in four weeks or $\$ 0$ in a week and $\$ 0$ in four weeks. As you proceed, Option A will stay the same while Option B will change. The
chance that you receive $\$ 20$ in a week and $\$ 19$ in four weeks and $\$ 20$ in a week and $\$ 0$ in four weeks will both increase, while the chance of receiving $\$ 0$ in a week and
$\$ 19$ in four weeks will decrease. Please also note that the chance of receiving $\$ 0$ in a week and $\$ 0$ in four weeks is also decreasing for Option B. For each row, decide
whether you prefer Option A or Option B.

|  |  |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  | $\square \square \square$ <br> $\square$ <br> $\square$ <br> $\square$ <br> $\square$ <br> $\square$ <br> $\square$ <br> $\square$  $\square \quad \square$ |
|  |  |
|  |  |
|  |  |

TASK 2
On the next page you will make a series of decisions between two options. Option A will be 10 in 100 chance of $\$ 10$ in a week and $\$ 19$ in four weeks with a 90 in
100 chance of receiving $\$ 10$ in a week and $\$ 0$ in four weeks. Note, unlike previous tasks, you get either $\$ 10$ in a week and $\$ 19$ in four weeks or $\$ 10$ in a week and $\$ 0$
in four weeks. Initially Option B will be a . 5 in 100 chance of receiving $\$ 20$ in a week and $\$ 19$ in four weeks, 4.5 in 100 chance of receiving $\$ 20$ in a week and $\$ 0$ in
four weeks and 9.5 in 100 chance of $\$ 0$ in a week and $\$ 19$ in four weeks. Again, you only receive one out of $\$ 20$ in a week and $\$ 19$ in four weeks, $\$ 20$ in a week or $\$ 0$
in a week, $\$ 0$ in a week and $\$ 19$ in four weeks or $\$ 0$ in a week and $\$ 0$ in four weeks. As you proceed, Option A will stay the same while Option B will change. The
chance that you receive $\$ 20$ in a week and $\$ 19$ in four weeks and $\$ 20$ in a week and $\$ 0$ in four weeks will both increase, while the chance of receiving $\$ 0$ in a week and
$\$ 19$ in four weeks will decrease. Please also note that the chance of receiving $\$ 0$ in a week and $\$ 0$ in four weeks is also decreasing for Option B. For each row, decide
whether you prefer Option A or Option B.

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TASK BLOCK D

Participant Number:

 and the second three to Option B. For each option, the first roll will represent the ten's digit, the second roll will represent the one's digit,

extra decimal is required because some of the payments occur with only a small chance.
Note that the values of the payments in each option are ordered from highest to lowest value. This corresponds the order with which the
dice rolls apply to payment values. The highest value will be received if the dice roll lands between 0 and the given chance. In this case for
Option A there is a 9.5 in 100 chance of receiving $\$ 10$ in one week and $\$ 19$ in 4 weeks, a 0.5 in 100 chance of receiving $\$ 0$ in a week and

$\$ 10$ would be received in one week and $\$ 19$ would be received in 4 weeks. If instead, the dice landed between 0-9-6 and 1-0-0 (a 0.5 in 100
chance) $\$ 19$ would be received in four weeks, the second highest value. Alternatively, if the dice landed between 1-0-1 and 9-5-5 (an 85.5
in 100 chance) $\$ 10$ would be received in a week, the third highest value. Finally, if the dice landed between 1-4-6 and 0-0-0 (a 85.5 in 100 chance) $\$ 0$ would be received in a week and $\$ 0$ in four weeks, the lowest value.
Now, consider the case for Option B. The highest value is $\$ 20$ in a week and $\$ 19$ in four weeks, which has a .5 in 100 chance. Therefore, if
the dice's roll landed between $0-0-1$ and $0-0-5, \$ 20$ would be received in a week and $\$ 19$ in four weeks. If instead, the dice landed between
0-0-6 and 0-5-0 (a 4.5 in 100 chance) $\$ 20$ would be received in a week, the second highest value. Alternatively, if the dice landed between
$0-5-1$ and 1-4-5 (a 9.5 in 100 chance) $\$ 19$ would be received in four weeks, the third highest value. Finally, if the dice landed between 1-4-6
and 0-0-0 (a 85.5 in 100 chance) $\$ 0$ would be received in a week and $\$ 0$ in four weeks, the lowest value.
The other task in this block is similar. Please take a look at all the tasks and raise your hand if you have any questions.

determines your payments.
TASK 1
On the next page you will make a series of decisions between two options. Option A will be 85.5 in 100 chance of $\$ 10$ in a week and $\$ 19$ in four weeks, 4.5 in 100
chance of $\$ 0$ in a week and $\$ 19$ in four weeks and 9.5 in 100 chance of $\$ 10$ in a week and $\$ 0$ in four weeks. Note, unlike previous tasks, you get either $\$ 10$ in a week
and $\$ 19$ in four weeks, $\$ 0$ in a week and $\$ 19$ in four weeks, $\$ 10$ in a week and $\$ 0$ in four weeks or $\$ 0$ in a week and $\$ 0$ in four weeks. Initially Option B will be a 4.5 in
100 chance of receiving $\$ 20$ in a week and $\$ 19$ in four weeks, .5 in 100 chance of receiving $\$ 20$ in a week and $\$ 0$ in four weeks and 85.5 in 100 chance of $\$ 0$ in a week
and $\$ 19$ in four weeks. Again, you only receive one out of $\$ 20$ in a week and $\$ 19$ in four weeks, $\$ 20$ in a week or $\$ 0$ in a week, $\$ 0$ in a week and $\$ 19$ in four weeks or
$\$ 0$ in a week and $\$ 0$ in four weeks. As you proceed, Option A will stay the same while Option B will change. The chance that you receive $\$ 20$ in a week and $\$ 19$ in
four weeks and $\$ 20$ in a week and $\$ 0$ in four weeks will both increase, while the chance of receiving $\$ 0$ in a week and $\$ 19$ in four weeks will decrease. Please also note
that the chance of receiving $\$ 0$ in a week and $\$ 0$ in four weeks is also decreasing for Option B. For each row, decide whether you prefer Option A or Option B.

|  | Option A |  |  |  |  | or | Option B |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\$ 10$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 10$ in a week and <br> $\$ 0$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 0$ in 4 weeks |  |  | $\$ 20$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 20$ in a week and <br> $\$ 0$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 0$ in 4 weeks |  |
|  | 85.5 in 100 Chance | 4.5 in 100 <br> Chance | 9.5 in 100 Chance | 0.5 in 100 <br> Chance | $\square$ | or | 0 in 100 Chance | 0 in 100 Chance | 90 in 100 Chance | 10 in 100 Chance | $\square$ |
| 1) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 9.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 2) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 9 in 100 Chance | 1 in 100 Chance | 81 in 100 <br> Chance | 9 in 100 Chance | $\square$ |
| 3) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 11.7 in 100 Chance | $\begin{gathered} 1.3 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 78.3 in 100 Chance | $8.7 \text { in } 100$ Chance | $\square$ |
| 4) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 14.4 in 100 Chance | 1.6 in 100 Chance | 75.6 in 100 <br> Chance | $\begin{aligned} & 8.4 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 5) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 17.1 in 100 Chance | $\begin{aligned} & 1.9 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{gathered} 72.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 8.1 in 100 Chance | $\square$ |
| 6) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 19.8 in 100 Chance | $\begin{gathered} 2.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 70.2 in 100 <br> Chance | $\begin{aligned} & 7.8 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 7) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 22.5 in 100 Chance | $\begin{gathered} 2.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 67.5 in 100 Chance | $\begin{gathered} 7.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 8) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 25.2 in 100 <br> Chance | 2.8 in 100 Chance | 64.8 in 100 <br> Chance | $\begin{gathered} 7.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 9) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $0.5 \text { in } 100$ Chance | $\square$ | or | $27.9 \text { in } 100$ Chance | $3.1 \text { in } 100$ | 62.1 in 100 Chance | $6.9 \text { in } 100$ Chance | $\square$ |
| 10) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 30.6 in 100 <br> Chance | $\begin{gathered} 3.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 59.4 in 100 Chance | 6.6 in 100 Chance | $\square$ |
| 11) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 33.3 in 100 <br> Chance | $\begin{gathered} 3.7 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $56.7 \text { in } 100$ <br> Chance | 6.3 in 100 Chance | $\square$ |
| 12) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 36 in 100 <br> Chance | $\begin{gathered} 4.0 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 54 in 100 Chance | 6.0 in 100 Chance | $\square$ |
| 13) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 38.7 in 100 Chance | $\begin{gathered} 4.3 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 51.3 in 100 <br> Chance | $\begin{aligned} & 5.7 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 14) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $41.4 \text { in } 100$ <br> Chance | $\begin{aligned} & 4.6 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 48.6 in 100 Chance | $\begin{aligned} & 5.4 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 15) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 <br> Chance | 0.5 in 100 Chance | $\square$ | or | 44.1 in 100 <br> Chance | $\begin{gathered} 4.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\begin{aligned} & 45.9 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 5.1 in 100 Chance | $\square$ |
| 16) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 46.8 in 100 Chance | $\begin{aligned} & 5.2 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 43.2 in 100 <br> Chance | 4.8 in 100 Chance | $\square$ |
| 17) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 49.5 in 100 Chance | $\begin{gathered} 5.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 40.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 18) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 52.2 in 100 <br> Chance | 5.8 in 100 Chance | 37.8 in 100 Chance | $\begin{gathered} 4.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 19) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | $0.5 \text { in } 100$ Chance | $\square$ | or | 54.9 in 100 Chance | $\begin{aligned} & 6.1 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 35.1 in 100 Chance | $\begin{aligned} & 3.9 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 20) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 57.6 in 100 Chance | $6.4 \text { in } 100$ Chance | 32.4 in 100 <br> Chance | 3.6 in 100 Chance | $\square$ |
| 21) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 60.3 in 100 Chance | $\begin{aligned} & 6.7 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 29.7 in 100 <br> Chance | 3.3 in 100 Chance | $\square$ |
| 22) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 63 in 100 <br> Chance | 7 in 100 Chance | 27 in 100 <br> Chance | 3 in 100 Chance | $\square$ |
| 23) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{gathered} 9.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 65.7 in 100 Chance | $\begin{gathered} 7.3 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 24.3 in 100 Chance | $\begin{gathered} 2.7 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 24) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 68.4 in 100 Chance | 7.6 in 100 Chance | 21.6 in 100 Chance | $\begin{aligned} & 2.4 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 25) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 71.1 in 100 <br> Chance | $\begin{gathered} 7.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $18.9 \text { in } 100$ <br> Chance | 2.1 in 100 Chance | $\square$ |
| 26) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 73.8 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\begin{gathered} 8.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 16.2 in 100 Chance | 1.8 in 100 Chance | $\square$ |
| 27) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\begin{aligned} & 9.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $76.5 \text { in } 100$ <br> Chance | $\begin{aligned} & 8.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 13.5 in 100 <br> Chance | $\begin{gathered} 1.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 28) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 79.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 8.8 in 100 Chance | $10.8 \text { in } 100$ <br> Chance | $\begin{gathered} 1.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 29) | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $81.9 \text { in } 100$ <br> Chance | $9.1 \text { in } 100$ Chance | 8.1 in 100 Chance | $0.9 \text { in } 100$ Chance | $\square$ |
| 30) | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 9.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $84.6 \text { in } 100$ <br> Chance | $\begin{gathered} 9.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\begin{gathered} 5.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 0.6 in 100 Chance | $\square$ |
| 30) | 85.5 in 100 Chance | 4.5 in 100 Chance | 9.5 in 100 Chance | 0.5 in 100 Chance | $\square$ | or | 90 in 100 Chance | 10 in 100 Chance | 0 in 100 Chance | $\begin{aligned} & 0 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | Q |

TASK 2
On the next page you will make a series of decisions between two options. Option A will be 9.5 in 100 chance of $\$ 10$ in a week and $\$ 19$ in four weeks, 0.5 in 100
chance of $\$ 0$ in a week and $\$ 19$ in four weeks and 85.5 in 100 chance of $\$ 10$ in a week and $\$ 0$ in four weeks. Note, unlike previous tasks, you get either $\$ 10$ in a week
and $\$ 19$ in four weeks, $\$ 0$ in a week and $\$ 19$ in four weeks, $\$ 10$ in a week and $\$ 0$ in four weeks or $\$ 0$ in a week and $\$ 0$ in four weeks. Initially Option B will be a . 5 in
100 chance of receiving $\$ 20$ in a week and $\$ 19$ in four weeks, 4.5 in 100 chance of receiving $\$ 20$ in a week and $\$ 0$ in four weeks and 9.5 in 100 chance of $\$ 0$ in a week
and $\$ 19$ in four weeks. Again, you only receive one out of $\$ 20$ in a week and $\$ 19$ in four weeks, $\$ 20$ in a week or $\$ 0$ in a week, $\$ 0$ in a week and $\$ 19$ in four weeks or
$\$ 0$ in a week and $\$ 0$ in four weeks. As you proceed, Option A will stay the same while Option B will change. The chance that you receive $\$ 20$ in a week and $\$ 19$ in
four weeks and $\$ 20$ in a week and $\$ 0$ in four weeks will both increase, while the chance of receiving $\$ 0$ in a week and $\$ 19$ in four weeks will decrease. Please also note
that the chance of receiving $\$ 0$ in a week and $\$ 0$ in four weeks is also decreasing for Option B. For each row, decide whether you prefer Option A or Option B.

|  | Option A |  |  |  |  | or | Option B |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\$ 10$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 10$ in a week and <br> $\$ 0$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 0$ in 4 weeks |  |  | $\$ 20$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 20$ in a week and <br> $\$ 0$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 19$ in 4 weeks | $\$ 0$ in a week and <br> $\$ 0$ in 4 weeks |  |
|  | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $4.5 \text { in } 100$ Chance | $\square$ | or | 0 in 100 Chance | 0 in 100 Chance | 10 in 100 Chance | 90 in 100 Chance | $\square$ |
| 1) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 0.5 in 100 <br> Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 9.5 in 100 Chance | 85.5 in 100 Chance | $\square$ |
| 2) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 1 in 100 Chance | 9 in 100 Chance | 9 in 100 Chance | 81 in 100 Chance | $\square$ |
| 3) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{aligned} & 1.3 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 11.7 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 8.7 in 100 Chance | 78.3 in 100 Chance | $\square$ |
| 4) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | 1.6 in 100 Chance | 14.4 in 100 Chance | 8.4 in 100 Chance | 75.6 in 100 Chance | $\square$ |
| 5) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 1.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 17.1 in 100 Chance | 8.1 in 100 Chance | $\begin{gathered} 72.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 6) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 2.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 19.8 in 100 Chance | 7.8 in 100 Chance | $\begin{gathered} 70.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
| 7) | 9.5 in 100 Chance | $0.5 \text { in } 100$ Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $2.5 \text { in } 100$ <br> Chance | $22.5 \text { in } 100$ <br> Chance | 7.5 in 100 Chance | 67.5 in 100 Chance | $\square$ |
| 8) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 2.8 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 25.2 in 100 Chance | $7.2 \text { in } 100$ Chance | $64.8 \text { in } 100$ <br> Chance | $\square$ |
| 9) | $9.5 \text { in } 100$ Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 85.5 in 100 Chance | $4.5 \text { in } 100$ | $\square$ | or | $3.1 \text { in } 100$ | $\begin{gathered} 27.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 6.9 in 100 Chance | 62.1 in 100 Chance | $\square$ |
| 10) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 3.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 30.6 in 100 Chance | 6.6 in 100 Chance | 59.4 in 100 <br> Chance | $\square$ |
| 11) | $9.5 \text { in } 100$ | $0.5 \text { in } 100$ Chance | 85.5 in 100 Chance | $4.5 \text { in } 100$ | $\square$ | or | $\begin{aligned} & 3.7 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 33.3 in 100 Chance | $6.3 \text { in } 100$ Chance | $56.7 \text { in } 100$ Chance | $\square$ |
| 12) | 9.5 in 100 Chance | $0.5 \text { in } 100$ Chance | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 4.0 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 36 in 100 Chance | 6.0 in 100 Chance | 54 in 100 Chance | $\square$ |
| 13) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 4.3 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 38.7 in 100 Chance | 5.7 in 100 Chance | 51.3 in 100 <br> Chance | $\square$ |
| 14) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 4.6 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 41.4 in 100 Chance | $\begin{aligned} & 5.4 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 48.6 in 100 Chance | $\square$ |
| 15) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 4.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $44.1 \text { in } 100$ <br> Chance | 5.1 in 100 Chance | $45.9 \text { in } 100$ <br> Chance | $\square$ |
| 16) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 5.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 46.8 in 100 Chance | 4.8 in 100 Chance | $43.2 \text { in } 100$ <br> Chance | $\square$ |
| 17) | $\begin{aligned} & 9.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{aligned} & 5.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $49.5 \text { in } 100$ <br> Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $40.5 \text { in } 100$ <br> Chance | $\square$ |
| 18) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 5.8 in 100 Chance | 52.2 in 100 Chance | $\begin{aligned} & 4.2 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 37.8 in 100 <br> Chance | $\square$ |
| 19) | $9.5 \text { in } 100$ | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 <br> Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 6.1 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\begin{aligned} & 54.9 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 3.9 in 100 Chance | 35.1 in 100 Chance | $\square$ |
| 20) | $\begin{aligned} & 9.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 6.4 in 100 Chance | 57.6 in 100 Chance | 3.6 in 100 Chance | 32.4 in 100 <br> Chance | $\square$ |
| 21) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 6.7 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 60.3 in 100 Chance | 3.3 in 100 Chance | 29.7 in 100 Chance | $\square$ |
| 22) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | 7 in 100 Chance | 63 in 100 Chance | 3 in 100 Chance | 27 in 100 Chance | $\square$ |
| 23) | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ |  | or | $\begin{gathered} 7.3 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 65.7 in 100 Chance | 2.7 in 100 Chance | $\begin{aligned} & 24.3 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ |
| 24) | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 7.6 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 68.4 in 100 Chance | $\begin{gathered} 2.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 21.6 in 100 <br> Chance | $\square$ |
| 25) | 9.5 in 100 Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 7.9 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 71.1 in 100 <br> Chance | $2.1 \text { in } 100$ <br> Chance | $18.9 \text { in } 100$ <br> Chance | $\square$ |
| 26) | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{aligned} & 8.2 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\begin{aligned} & 73.8 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 1.8 in 100 Chance | 16.2 in 100 Chance | $\square$ |
| 27) | $9.5 \text { in } 100$ <br> Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | $\begin{gathered} 8.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $76.5 \text { in } 100$ <br> Chance | $\begin{gathered} 1.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $13.5 \text { in } 100$ <br> Chance | $\square$ |
| 28) | $9.5 \text { in } 100$ <br> Chance | $\begin{aligned} & 0.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $8.8 \text { in } 100$ Chance | $\begin{gathered} 79.2 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $1.2 \text { in } 100$ <br> Chance | 10.8 in 100 <br> Chance | $\square$ |
| 29) | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $9.1 \text { in } 100$ Chance | $81.9 \text { in } 100$ <br> Chance | 0.9 in 100 Chance | 8.1 in 100 Chance | $\square$ |
| 30) | 9.5 in 100 Chance | $\begin{gathered} 0.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | 85.5 in 100 Chance | $\begin{gathered} 4.5 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ | or | $\begin{gathered} 9.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $84.6 \text { in } 100$ <br> Chance | 0.6 in 100 Chance | $\begin{gathered} 5.4 \text { in } 100 \\ \text { Chance } \end{gathered}$ | $\square$ |
|  | 9.5 in 100 Chance | 0.5 in 100 Chance | 85.5 in 100 <br> Chance | $\begin{aligned} & 4.5 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | $\square$ | or | 10 in 100 Chance | 90 in 100 Chance | 0 in 100 Chance | $\begin{aligned} & 0 \text { in } 100 \\ & \text { Chance } \end{aligned}$ | Q |


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[^1]:    ${ }^{1}$ http://www.nber.org/papers/w24075

[^2]:    ${ }^{2}$ As in Andreoni et al. (2017), we are using $\gamma=.697$ (probabilitity weigthing parameter) and $\alpha=.75$ (risk aversion parameter).

