

May 2017

Appendix on the structure of our ALP Ambiguity Aversion Survey

Dimmock, Stephen G., Roy Kouwenberg, Olivia S. Mitchell and Kim Peijnenburg. (2016). "Ambiguity Attitudes and Economic Behavior: Results from a US Household Survey." *Journal of Financial Economics*. 119(3): 559–577.

and

Dimmock, Stephen G., Roy Kouwenberg, Olivia S. Mitchell and Kim Peijnenburg. (2015). "Estimating Ambiguity Preferences and Perceptions in Multiple Prior Models: Evidence from the Field." *Journal of Risk and Uncertainty*. 51(3): 219-244.

Questions on Unknown Outcome

[Note to Programmer: Please start each new question on the next screen. Also make sure each screen can be seen on one page (so the respondent doesn't have to scroll up and down).]

Instructions:

- In this survey you will be asked to answer several questions about how people make decisions about saving and insurance, as well as how people decide about unknown outcomes. Please answer these questions to the best of your ability, even if you are not sure of the answers.
- After completing the survey, one of the questions you answered will be selected randomly by the computer, and your winnings will be based on the choices you have made. Your winnings will be between \$0 and \$15, in addition to your payment for answering the survey.

I. Introductory questions

Q1.1: In deciding how much of their income to save, people are likely to think about different financial planning periods. In planning your household saving, which of the following time periods is most important to you?

1. The next few months
2. The next year
3. The next few years
4. The next 5-10 years
5. Longer than 10 years

[Employer-Provided Retirement Account Holdings]

Q1.2: Do you have any employer-provided retirement accounts? These include any Defined Benefit or Defined Contribution plans (for instance 401(k)/403(b), thrift saving, profit-sharing, stock purchase, cash balance, or combination plans).

1. Yes
2. No → go to Q1.5
3. DK → go to Q1.5

Q1.3: Are you able to choose how the money in this plan (or these plans) is invested?

1. All of it
2. Some of it
3. None of it → go to Q1.5
4. DK

Q1.4: About what share of this money is invested in stock or stock mutual funds, if any?

1. None of it
2. Less than half of it
3. About half of it
4. More than half

5. All of it
6. DK

[Financial Literacy, and Ambiguity for Stock Market & Insurance]

Q1-5: Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- (1) More than \$102
- (2) Exactly \$102
- (3) Less than \$102
- (4) Don't know

Q1-6: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?

- (1) More than today
- (2) Exactly the same as today
- (3) Less than today
- (4) Don't know

PROGRAMMER NOTES:

Random_Ambiguity is a random variable taking on one of two values (1, 2) that randomizes wording of question and answers, and randomizes the sequence of ambiguity questions and risk questions. So only one random variable will be created, with both value 1 and 2 having a 50% probability.

If Random_Ambiguity =1 then R gets the following wording:

in Q1-7: in question, first single company stock, then stock mutual fund.

in Q1-8: in answers, Very low, Low, Moderate, High, Very High

in Q1-9: in answers, Very low, Low, Moderate, High, Very High

If Random_Ambiguity =2 then R gets the following wording:

in Q1-7: in question, first stock mutual fund, then single company stock.

in Q1-8: in answers, Very high, High, Moderate, Low, Very Low

in Q1-9: in answers, Very high, High, Moderate, Low, Very Low

Q1-7: Please tell us whether this statement is true or false. Buying a [single company stock/stock mutual fund] usually provides a safer return than a [stock mutual fund/ single company stock]

- (1) True
- (2) False
- (3) Don't know

Q1-8: How would you rate your knowledge about the stock market?

- (1) Very low
- (2) Low
- (3) Moderate
- (4) High
- (5) Very high

Q1-9: How would you rate your knowledge about the chances of incurring large health costs over your lifetime?

- (1) Very low
- (2) Low
- (3) Moderate
- (4) High

(5) Very high

II. First risk question

PROGRAMMER NOTES:

Previously the random variable *Random_Ambiguity* was made. If *Random_Ambiguity* =1 then R is taken through the risk aversion questions first and then the ambiguity aversion questions; if *Random_Ambiguity* =2 then R is taken through the ambiguity aversion questions first and then the risk aversion questions, as follows:

If <i>Random_Ambiguity</i>	Ask Q2-1 to Q4-7 and then Q5-1 to Q9-13	Ask Q5-1 to Q9-13 and then Q2-1 to Q4-7
1	Yes	No
2	No	Yes

[Note to Programmer: Within each question, the known probability of winning changes from round to round. Please **BOLD** the 'You Win' amounts in all rounds after the first round.]

Q2-1 Branchpoint:

- If *Random_Ambiguity*=1, go to Q2-1
- Else go to Q5-1

In words: If R's randomized entry point takes R to the ambiguity aversion questions first, go to **Q5-1**

Instructions:

- In the following questions, we will ask you to choose between two boxes containing colored balls. One box contains only balls of one color and you win for certain. The other box contains different colors and whether you win is not certain.
- There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose Indifferent.

Q2-1: In this question you can choose between Box A and Box B.
If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$82.
a orange ball is drawn, you win \$3.

Box A		Box B	
Chance	You Win	Chance	You Win
100%	\$10	Purple 10%	\$82
		Orange 90%	\$3

Which box do you prefer?

() Box A () Box B
() Indifferent

NOTE: If answer=A, then follow up with Q2-2. If answer =B, then follow up with Q2-3.
If answer=Indifferent, then follow up with Q3-1.

Q2-2: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$220.
 a orange ball is drawn, you win \$3.

Box A		Box B		
-----		-----		
Chance	You win		Chance	You Win
100%	\$10	Purple	10%	\$220
		Orange	90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q2-4. If answer =B, then follow up with Q2-5.
 If answer=Indifferent, then follow up with Q3-1.*

Q2-3: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls. If you choose Box B and
 a purple ball is drawn, you win \$40.
 a orange ball is drawn, you win \$3.

Box A		Box B		
-----		-----		
Chance	You win		Chance	You Win
100%	\$10	Purple	10%	\$40
		Orange	90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q2-10. If answer =B, then follow up with Q2-11.
 If answer=Indifferent, then follow up with Q3-1.*

Q2-4: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$400.
 a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$400
		Orange 90%	\$3

Which box do you prefer?

Box A

Box B

Indifferent

NOTE: If answer=A, then follow up with Q2-6. If answer =B, then follow up with Q2-7. If answer=Indifferent, then follow up with Q3-1.

Q2-5: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls. .

If you choose Box B and
 a purple ball is drawn, you win \$120.
 a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$120
		Orange 90%	\$3

Which box do you prefer?

Box A

Box B

Indifferent

NOTE: If answer=A, then follow up with Q2-8. If answer =B, then follow up with Q2-9. If answer=Indifferent, then follow up with Q3-1.

Q2-6: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls. .

If you choose Box B and
 a purple ball is drawn, you win \$800.
 a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$800
		Orange 90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

Q2-7: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$300.
a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$300
		Orange 90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

Q2-8: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$160.
a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$160
		Orange 90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

Q2-9: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$98.
 a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$98
		Orange 90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

Q2-10: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$56.
 a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$56
		Orange 90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q2-12. If answer =B, then follow up with Q2-13.
 If answer=Indifferent, then follow up with Q3-1.*

Q2-11: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls.

If you choose Box B and

a purple ball is drawn, you win \$30.
 a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$30
		Orange 90%	\$3

Which box do you prefer?

Box A

Box B

Indifferent

*NOTE: If answer=A, then follow up with Q2-14. If answer =B, then follow up with Q3-1.
 If answer=Indifferent, then follow up with Q3-1.*

Q2-12: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls..

If you choose Box B and

a purple ball is drawn, you win \$68.

a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$68
		Orange 90%	\$3

Which box do you prefer?

Box A

Box B

Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

Q2-13: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls..

If you choose Box B and

a purple ball is drawn, you win \$46.

a orange ball is drawn, you win \$3.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$10	Purple 10%	\$46

Orange 90% **\$3**

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

Q2-14: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$10.

Box B holds 10 purple balls and 90 orange balls..

If you choose Box B and
a purple ball is drawn, you win \$35.
a orange ball is drawn, you win \$3.

Box A		Box B		
-----		-----		
Chance	You win		Chance	You Win
100%	\$10	Purple	10%	\$35
		Orange	90%	\$3

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q3-1. (first risk question completed, move to second risk question)

III. Second risk question

*[Note to Programmer: Within each question, the known probability of winning changes from round to round. Please **BOLD** the 'You Win' amounts in all rounds after the first round.]*

Q3-1: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$85.
a orange ball is drawn, you win \$5.

Box A		Box B		
-----		-----		
Chance	You win		Chance	You Win
100%	\$50	Purple	75%	\$85
		Orange	25%	\$5

Which box do you prefer?

() Box A () Box B
() Indifferent

*NOTE: If answer=A, then follow up with Q3-2. If answer =B, then follow up with Q3-3.
If answer=Indifferent, then follow up with Q4-1.*

Q3-2: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$125.
a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$125
		Orange 25%	\$5

Which box do you prefer?

() Box A () Box B
() Indifferent

*NOTE: If answer=A, then follow up with Q3-4. If answer =B, then follow up with Q3-5.
If answer=Indifferent, then follow up with Q4-1.*

Q3-3: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls. If you choose Box B and
a purple ball is drawn, you win \$70.
a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$70
		Orange 25%	\$5

Which box do you prefer?

() Box A () Box B
() Indifferent

*NOTE: If answer=A, then follow up with Q3-10. If answer =B, then follow up with Q3-11.
If answer=Indifferent, then follow up with Q4-1.*

Q3-4: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and

a purple ball is drawn, you win \$150.

a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$150
		Orange 25%	\$5

Which box do you prefer?

Box A

Box B

Indifferent

*NOTE: If answer=A, then follow up with Q3-6. If answer =B, then follow up with Q3-7.
If answer=Indifferent, then follow up with Q4-1.*

Q3-5: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and

a purple ball is drawn, you win \$100.

a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$100
		Orange 25%	\$5

Which box do you prefer?

Box A

Box B

Indifferent

*NOTE: If answer=A, then follow up with Q3-8. If answer =B, then follow up with Q3-9.
If answer=Indifferent, then follow up with Q4-1.*

Q3-6: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and

a purple ball is drawn, you win \$170.

a orange ball is drawn, you win \$5.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$170
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

Q3-7: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls..

If you choose Box B and
a purple ball is drawn, you win \$135.
a orange ball is drawn, you win \$5.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$135
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

Q3-8: In this question you can choose between Box A and Box B

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$110.
a orange ball is drawn, you win \$5.

Box A		Box B	
-----		-----	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$110
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

Q3-9: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$92.50.
a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$92.50
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

Q3-10: In this question you can choose between Box A and Box B

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
a purple ball is drawn, you win \$76.
a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$76
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q3-12. If answer =B, then follow up with Q3-13.
If answer=Indifferent, then follow up with Q4-1.*

Q3-11: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$66.
 a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$66
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q3-14. If answer =B, then follow up with Q4-1.
 If answer=Indifferent, then follow up with Q4-1.*

Q3-12: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$80.
 a orange ball is drawn, you win \$5.

Box A		Box B	
Chance	You win	Chance	You Win
100%	\$50	Purple 75%	\$80
		Orange 25%	\$5

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

Q3-13: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and

a purple ball is drawn, you win \$72.50.
 a orange ball is drawn, you win \$5.

Box A	Box B										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Chance</td> <td style="width: 50%;">You win</td> </tr> <tr> <td style="text-align: center;">100%</td> <td style="text-align: center;">\$50</td> </tr> </table>	Chance	You win	100%	\$50	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Chance</td> <td style="width: 50%;">You Win</td> </tr> <tr> <td>Purple 75%</td> <td style="text-align: center;">\$72.50</td> </tr> <tr> <td>Orange 25%</td> <td style="text-align: center;">\$5</td> </tr> </table>	Chance	You Win	Purple 75%	\$72.50	Orange 25%	\$5
Chance	You win										
100%	\$50										
Chance	You Win										
Purple 75%	\$72.50										
Orange 25%	\$5										
Which box do you prefer?											
(<input type="checkbox"/>) Box A	(<input type="checkbox"/>) Box B										
(<input type="checkbox"/>) Indifferent											

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

Q3-14: In this question you can choose between Box A and Box B.

If you choose Box A, you win \$50.

Box B holds 75 purple balls and 25 orange balls.

If you choose Box B and
 a purple ball is drawn, you win \$68.
 a orange ball is drawn, you win \$5.

Box A	Box B										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Chance</td> <td style="width: 50%;">You win</td> </tr> <tr> <td style="text-align: center;">100%</td> <td style="text-align: center;">\$50</td> </tr> </table>	Chance	You win	100%	\$50	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Chance</td> <td style="width: 50%;">You Win</td> </tr> <tr> <td>Purple 75%</td> <td style="text-align: center;">\$68</td> </tr> <tr> <td>Orange 25%</td> <td style="text-align: center;">\$5</td> </tr> </table>	Chance	You Win	Purple 75%	\$68	Orange 25%	\$5
Chance	You win										
100%	\$50										
Chance	You Win										
Purple 75%	\$68										
Orange 25%	\$5										
Which box do you prefer?											
(<input type="checkbox"/>) Box A	(<input type="checkbox"/>) Box B										
(<input type="checkbox"/>) Indifferent											

NOTE: Go to Q4-1. (second risk question completed, move to third risk question)

IV. Third risk question

*[Note to Programmer: Within each question, the known probability of winning changes from round to round. Please **BOLD** the 'You Win' amounts in all rounds after the first round.]*

Instructions:

- You will again be asked to choose between two boxes containing colored balls. A ball will be drawn randomly from the box that you choose. Here some of the outcomes involve monetary losses, but you will not actually win or lose money for answering any individual question. If you feel both boxes are equally attractive, please choose Indifferent.

Q4-1: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange.

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and
 a purple ball is drawn, you win \$2.
 a orange ball is drawn, you lose \$8.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and
 a purple ball is drawn, you win \$60.
 a orange ball is drawn, you lose \$32.

Box A			Box B		
	Chance	You win		Chance	You win
Purple	50%	+\$2	Purple	50%	+\$60
Orange	50%	-\$8	Orange	50%	-\$32

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q4-2. If answer =B, then follow up with Q4-3.
 If answer=Indifferent, then go to Q5-1 branchpoint.*

Q4-2: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange..

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and
 a purple ball is drawn, you win \$2.
 a orange ball is drawn, you lose \$16.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and
 a purple ball is drawn, you win \$60.
 a orange ball is drawn, you lose \$28.

Box A			Box B		
	Chance	You win		Chance	You win
Purple	50%	+\$2	Purple	50%	+\$60
Orange	50%	-\$16	Orange	50%	-\$28

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q4-4. If answer =B, then follow up with Q4-5.
 If answer=Indifferent, then go to Q5-1 branchpoint.*

Q4-3: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange.

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and
 a purple ball is drawn, you win \$8.
 a orange ball is drawn, you lose \$8.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and
 a purple ball is drawn, you win \$60.
 a orange ball is drawn, you lose \$42.

Box A			Box B		
-----			-----		
	Chance	You win		Chance	You win
Purple	50%	+\$8	Purple	50%	+\$60
Orange	50%	-\$8	Orange	50%	-\$42

Which box do you prefer?

Box A Box B
 Indifferent

*NOTE: If answer=A, then follow up with Q4-6. If answer =B, then follow up with Q4-7.
 If answer=Indifferent, then go to Q5-1 branchpoint.*

Q4-4: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange.

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and
 a purple ball is drawn, you win \$2.
 a orange ball is drawn, you lose \$16.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and
 a purple ball is drawn, you win \$60.
 a orange ball is drawn, you lose \$22.

Box A			Box B		
-----			-----		
	Chance	You win		Chance	You win
Purple	50%	+\$2	Purple	50%	+\$60
Orange	50%	-\$16	Orange	50%	-\$22

Which box do you prefer?

Box A Box B
 Indifferent

NOTE: Go to Q5-1 branchpoint. (third risk question completed)

Q4-5: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange.

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and
 a purple ball is drawn, you win \$2.
 a orange ball is drawn, you lose \$16.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and
 a purple ball is drawn, you win \$60.
 a orange ball is drawn, you lose \$32.

Box A			Box B		
-----			-----		
	Chance	You win		Chance	You win
Purple	50%	+\$2	Purple	50%	+\$60
Orange	50%	-\$16	Orange	50%	-\$32

Which box do you prefer?

Box A Box B

Indifferent

NOTE: Go to Q5-1 branchpoint. (third risk question completed)

Q4-6: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange.

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and
 a purple ball is drawn, you win \$2.
 a orange ball is drawn, you lose \$8.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and
 a purple ball is drawn, you win \$60.
 a orange ball is drawn, you lose \$42.

Box A			Box B		
-----			-----		
	Chance	You win		Chance	You win
Purple	50%	+\$2	Purple	50%	+\$60
Orange	50%	-\$8	Orange	50%	-\$42

Which box do you prefer?

Box A Box B

() Indifferent

NOTE: Go to Q5-1 branchpoint. (third risk question completed)

Q4-7: In this question you can choose between Box A and Box B, both hold 100 balls which can either be purple or orange.

Box A holds 50 purple balls and 50 orange balls.

If you choose box A and

a purple ball is drawn, you win \$50.

a orange ball is drawn, you lose \$8.

Box B holds 50 purple balls and 50 orange balls.

If you choose box B and

a purple ball is drawn, you win \$60.

a orange ball is drawn, you lose \$42.

Box A

Box B

Box A			Box B		
	Chance	You win		Chance	You win
Purple	50%	+\$50	Purple	50%	+\$60
Orange	50%	-\$8	Orange	50%	-\$42

Which box do you prefer?

() Box A

() Box B

() Indifferent

NOTE: Go to Q5-1 branchpoint. (third risk question completed)

V. First ambiguity question (2-ball, 50%)

Q5-1 branchpoint:

- **If Random Ambiguity=2, go to Q9-1. Else go to Q5-1**

In words: If R already answered the ambiguity questions, go to Q9-1. Else go to Q5-1

Instructions:

- You can win additional money on top of your regular payment for answering the survey, by answering the next questions.
- You will be asked to choose between two boxes, Box K and Box U. Each box contains 100 balls of different colors. After you choose a box, one ball is drawn out of that box. If the ball is the right color, you could win \$15. There are no right or wrong answers for these questions. If you feel both boxes are equally attractive, please choose Indifferent. After completing the survey, one of the questions you answered will be selected randomly by the computer and played for real money. Your winnings will be based on the choices you made.

PROGRAMMER NOTES:

During the rounds of question Q5 please create and update two variables for each respondent, MP^{50}_{low} and MP^{50}_{up} (the lower and upper bounds on the matching probability). These two variables will be used later on to generate the starting point for question Q8. [instructions are provided below]

[Note to Programmer: Within each question, the known probability of winning changes from round to round. Please **BOLD** the known probability of winning in all rounds after the first round.]

Q5-1: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You win		Chance	You win
Purple	50%	\$15	Purple	? %	\$15
Orange	50%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer =K, then $MP^{50}_{low} = 0$ and $MP^{50}_{up} = 50$, and follow up with Q5-2.

If answer =U, then $MP^{50}_{low} = 50$ and $MP^{50}_{up} = 100$, and follow up with Q5-9.

If indifferent, then $MP^{50}_{low} = 50$ and $MP^{50}_{up} = 50$, and go to Q6-1.

Q5-2: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You win		Chance	You win
Purple	25%	\$15	Purple	? %	\$15
Orange	75%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

*NOTE: If answer =K, then $MP^{50}_{up} = 25$, and follow up with Q5-3.
 If answer=U then $MP^{50}_{low} = 25$, and follow up with Q5-6.
 If indifferent then $MP^{50}_{low} = 25$ and $MP^{50}_{up} = 25$, and go to Q6-1.*

Q5-3: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	12%	\$15	Purple	? %	\$15
Orange	88%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

*NOTE: If answer =K, then $MP^{50}_{up} = 12$, and follow up with Q5-4.
 If answer=U, then $MP^{50}_{low} = 12$, and follow up with Q5-5.
 If indifferent then $MP^{50}_{low} = 12$ and $MP^{50}_{up} = 12$, and go to Q6-1.*

Q5-4: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn. Please choose which box you would prefer: U or K.

Box K			Box U		

	Chance	You win		Chance	You win
Purple	6%	\$15	Purple	? %	\$15
Orange	94%	\$0	Orange	? %	\$0

Box K

Box U

Indifferent

NOTE: If answer = K, then $MP^{50}_{up} = 6$. If answer = U, then $MP^{50}_{low} = 6$.

If indifferent then $MP^{50}_{low} = 6$ and $MP^{50}_{up} = 6$.

Go to Q6-1. (regardless of answer)

Q5-5: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	18%	\$15	Purple	? %	\$15
Orange	82%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K

Box U

Indifferent

NOTE: If answer = K, then $MP^{50}_{up} = 18$. If answer = U, then $MP^{50}_{low} = 18$.

If indifferent then $MP^{50}_{low} = 18$ and $MP^{50}_{up} = 18$.

Go to Q6-1. (regardless of answer)

Q5-6: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You win		Chance	You win
Purple	38%	\$15	Purple	? %	\$15
Orange	62%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer = K, then $MP^{50}_{up} = 38$, and follow up with Q5-7.

If answer = U then $MP^{50}_{low} = 38$, and follow up with Q5-8.

If indifferent then $MP^{50}_{low} = 38$ and $MP^{50}_{up} = 38$, and go to Q6-1.

Q5-7: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You win		Chance	You win
Purple	32%	\$15	Purple	? %	\$15
Orange	68%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer = K, then $MP^{50}_{up} = 32$. If answer = U, then $MP^{50}_{low} = 32$.

If indifferent then $MP^{50}_{low} = 32$ and $MP^{50}_{up} = 32$.

Go to Q6-1. (regardless of answer)

Q5-8: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	44%	\$15	Purple	? %	\$15
Orange	56%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

*NOTE: If answer = K, then $MP_{up}^{50} = 44$. If answer = U, then $MP_{low}^{50} = 44$.
If indifferent then $MP_{low}^{50} = 44$ and $MP_{up}^{50} = 44$.
Go to Q6-1. (regardless of answer)*

Q5-9: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	75%	\$15	Purple	? %	\$15
Orange	25%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

*NOTE: If answer = K, then $MP_{up}^{50} = 75$, and follow up with Q5-10.
If answer = U then $MP_{low}^{50} = 75$, and follow up with Q5-13.
If indifferent then $MP_{low}^{50} = 75$ and $MP_{up}^{50} = 75$, and go to Q6-1.*

Q5-10: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K		Box U	
-----		-----	
Chance	You win	Chance	You win
Yellow 62%	\$15	Yellow ? %	\$15
Orange 38%	\$0	Orange ? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer = K, then $MP^{50}_{up} = 62$, and follow up with Q5-11.

If answer = U then $MP^{50}_{low} = 62$, and follow up with Q5-12.

If indifferent then $MP^{50}_{low} = 62$ and $MP^{50}_{up} = 62$, and go to Q6-1.

Q5-11: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K		Box U	
-----		-----	
Chance	You win	Chance	You win
Purple 56%	\$15	Purple ? %	\$15
Orange 44%	\$0	Orange ? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer = K, then $MP^{50}_{up} = 56$. If answer = U, then $MP^{50}_{low} = 56$.

If indifferent then $MP^{50}_{low} = 56$ and $MP^{50}_{up} = 56$.

Go to Q6-1. (regardless of answer)

Q5-12: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K		Box U
Chance	You win	Chance
Purple 68%	\$15	Purple ? %
Orange 32%	\$0	Orange ? %

Which box do you prefer?

Box K Box U
 Indifferent

*NOTE: If answer =K, then $MP^{50}_{up} = 68$. If answer=U, then $MP^{50}_{low} = 68$.
 If indifferent then $MP^{50}_{low} = 68$ and $MP^{50}_{up} = 68$.
 Go to Q6-1. (regardless of answer)*

Q5-13: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K		Box U
Chance	You win	Chance
Purple 88%	\$15	Purple ? %
Orange 12%	\$0	Orange ? %

Which box do you prefer?

Box K Box U
 Indifferent

*NOTE: If answer =K, then $MP^{50}_{up} = 88$. If answer=U, then $MP^{50}_{low} = 88$.
 If indifferent then $MP^{50}_{low} = 88$ and $MP^{50}_{up} = 88$.
 Go to Q6-1. (regardless of answer)*

VI. Second ambiguity question (10-ball, 10%)

[Note to Programmer: Can you make sure each screen can be seen on one page (so the respondent doesn't have to scroll up and down). Two columns of probabilities and payoffs, instead of one long column, under both box K and under box U would probably work.]

[Note to Programmer: Within each question, the known probability of winning changes from round to round. Please **BOLD** the known probability of winning in all rounds after the first round.]

Q6-1: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	10%	\$15	Purple	?%	\$15
Brown	10%	\$0	Brown	?%	\$0
Blue	10%	\$0	Blue	?%	\$0
Yellow	10%	\$0	Yellow	?%	\$0
Pink	10%	\$0	Pink	?%	\$0
Red	10%	\$0	Red	?%	\$0
Green	10%	\$0	Green	?%	\$0
Orange	10%	\$0	Orange	?%	\$0
Grey	10%	\$0	Grey	?%	\$0
Black	10%	\$0	Black	?%	\$0

Which box do you prefer?
 Box K Box U
 Indifferent

NOTE: If answer =K, then follow up with Q6-2. If answer =U, then follow up with Q6-5. If indifferent go to Q7-1.

Q6-2: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	5%	\$15	Purple	??%	\$15
Brown	11%	\$0	Brown	??%	\$0
Blue	11%	\$0	Blue	??%	\$0
Yellow	11%	\$0	Yellow	??%	\$0
Pink	11%	\$0	Pink	??%	\$0
Red	11%	\$0	Red	??%	\$0
Green	10%	\$0	Green	??%	\$0
Orange	10%	\$0	Orange	??%	\$0
Grey	10%	\$0	Grey	??%	\$0
Black	10%	\$0	Black	??%	\$0

Which box do you prefer?

Box K

Box U

Indifferent

NOTE: If answer = K, then follow up with Q6-3. If answer = U, then follow up with Q6-4. If indifferent go to Q7-1.

Q6-3: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	3%	\$15	Purple	??%	\$15
Brown	11%	\$0	Brown	??%	\$0
Blue	11%	\$0	Blue	??%	\$0
Yellow	11%	\$0	Yellow	??%	\$0
Pink	11%	\$0	Pink	??%	\$0
Red	11%	\$0	Red	??%	\$0
Green	11%	\$0	Green	??%	\$0
Orange	11%	\$0	Orange	??%	\$0
Grey	10%	\$0	Grey	??%	\$0
Black	10%	\$0	Black	??%	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: Go to Q7-1.

Q6-4: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	8%	\$15	Purple	?%	\$15
Brown	11%	\$0	Brown	?%	\$0
Blue	11%	\$0	Blue	?%	\$0
Yellow	10%	\$0	Yellow	?%	\$0
Pink	10%	\$0	Pink	?%	\$0
Red	10%	\$0	Red	?%	\$0
Green	10%	\$0	Green	?%	\$0
Orange	10%	\$0	Orange	?%	\$0
Grey	10%	\$0	Grey	?%	\$0
Black	10%	\$0	Black	?%	\$0

Which box do you prefer?

Box K Box U
 Indifferent

Go to Q7-1.

Q6-5: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

() Indifferent

NOTE: Go to Q7-1.

Q6-7: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	40%	\$15	Purple	?%	\$15
Brown	7%	\$0	Brown	?%	\$0
Blue	7%	\$0	Blue	?%	\$0
Yellow	7%	\$0	Yellow	?%	\$0
Pink	7%	\$0	Pink	?%	\$0
Red	7%	\$0	Red	?%	\$0
Green	7%	\$0	Green	?%	\$0
Orange	6%	\$0	Orange	?%	\$0
Grey	6%	\$0	Grey	?%	\$0
Black	6%	\$0	Black	?%	\$0

Which box do you prefer?

() Box K

() Box U

() Indifferent

*NOTE: If answer =K, then follow up with Q6-8. If answer =U, then follow up with Q6-9.
If indifferent go to Q7-1.*

Q6-8: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	30%	\$15	Purple	??%	\$15
Brown	7%	\$0	Brown	??%	\$0
Blue	7%	\$0	Blue	??%	\$0
Yellow	8%	\$0	Yellow	??%	\$0
Pink	8%	\$0	Pink	??%	\$0
Red	8%	\$0	Red	??%	\$0
Green	8%	\$0	Green	??%	\$0
Orange	8%	\$0	Orange	??%	\$0
Grey	8%	\$0	Grey	??%	\$0
Black	8%	\$0	Black	??%	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: Go to Q7-1.

Q6-9: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	70%	\$15	Purple	??%	\$15
Brown	4%	\$0	Brown	??%	\$0
Blue	4%	\$0	Blue	??%	\$0
Yellow	4%	\$0	Yellow	??%	\$0
Pink	3%	\$0	Pink	??%	\$0
Red	3%	\$0	Red	??%	\$0
Green	3%	\$0	Green	??%	\$0
Orange	3%	\$0	Orange	??%	\$0
Grey	3%	\$0	Grey	??%	\$0
Black	3%	\$0	Black	??%	\$0

Which box do you prefer?

Box K Box U
 Indifferent

VII. Third ambiguity question (10-ball, 90%)

[Note to Programmer: Within each question, the known probability of winning changes from round to round. Please **BOLD** the known probability of winning in all rounds after the first round.]

Q7-1: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	10%	\$0	Purple	?%	\$0
Yellow	10%	\$15	Yellow	?%	\$15
Brown	10%	\$15	Brown	?%	\$15
Blue	10%	\$15	Blue	?%	\$15
Black	10%	\$15	Black	?%	\$15
Pink	10%	\$15	Pink	?%	\$15
Red	10%	\$15	Red	?%	\$15
Green	10%	\$15	Green	?%	\$15
Orange	10%	\$15	Orange	?%	\$15
Grey	10%	\$15	Grey	?%	\$15

Which box do you prefer?

Box K

Box U

Indifferent

NOTE: If answer = K, then follow up with Q7-2. If answer = U, then follow up with Q7-11. If indifferent go to Q8-1.

Q7-2: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

() Indifferent

NOTE: If answer =K, then follow up with Q7-4. If answer =U, then follow up with Q7-10. If indifferent go to Q8-1.

Q7-4: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	89%	\$0	Purple	?%	\$0
Yellow	2%	\$15	Yellow	?%	\$15
Brown	2%	\$15	Brown	?%	\$15
Blue	1%	\$15	Blue	?%	\$15
Black	1%	\$15	Black	?%	\$15
Pink	1%	\$15	Pink	?%	\$15
Red	1%	\$15	Red	?%	\$15
Green	1%	\$15	Green	?%	\$15
Orange	1%	\$15	Orange	?%	\$15
Grey	1%	\$15	Grey	?%	\$15

Which box do you prefer?

() Box K () Box U
 () Indifferent

NOTE: Go to Q8-1.

Q7-5: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K

	Chance	You win
Purple	32%	\$0
Yellow	7%	\$15
Brown	7%	\$15
Blue	7%	\$15
Black	7%	\$15
Pink	8%	\$15
Red	8%	\$15
Green	8%	\$15
Orange	8%	\$15
Grey	8%	\$15

Box U

	Chance	You win
Purple	??%	\$0
Yellow	??%	\$15
Brown	??%	\$15
Blue	??%	\$15
Black	??%	\$15
Pink	??%	\$15
Red	??%	\$15
Green	??%	\$15
Orange	??%	\$15
Grey	??%	\$15

Which box do you prefer?

 Box K Box U Indifferent

NOTE: If answer =K, then follow up with Q7-6. If answer =U, then follow up with Q7-7. If indifferent go to Q8-1.

Q7-6: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K

	Chance	You win
Purple	44%	\$0
Yellow	6%	\$15
Brown	6%	\$15
Blue	6%	\$15
Black	6%	\$15
Pink	6%	\$15
Red	6%	\$15
Green	6%	\$15
Orange	7%	\$15
Grey	7%	\$15

Box U

	Chance	You win
Purple	??%	\$0
Yellow	??%	\$15
Brown	??%	\$15
Blue	??%	\$15
Black	??%	\$15
Pink	??%	\$15
Red	??%	\$15
Green	??%	\$15
Orange	??%	\$15
Grey	??%	\$15

Which box do you prefer?

 Box K Box U Indifferent

NOTE: Go to Q8-1.

Q7-7: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	20%	\$0	Purple	?%	\$0
Yellow	8%	\$15	Yellow	?%	\$15
Brown	9%	\$15	Brown	?%	\$15
Blue	9%	\$15	Blue	?%	\$15
Black	9%	\$15	Black	?%	\$15
Pink	9%	\$15	Pink	?%	\$15
Red	9%	\$15	Red	?%	\$15
Green	9%	\$15	Green	?%	\$15
Orange	9%	\$15	Orange	?%	\$15
Grey	9%	\$15	Grey	?%	\$15

Which box do you prefer?

- Box K Box U
 Indifferent

NOTE: If answer =K, then follow up with Q7-8. If answer =U, then follow up with Q7-9. If indifferent go to Q8-1.

Q7-8: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K

	Chance	You win
Purple	26%	\$0
Yellow	8%	\$15
Brown	8%	\$15
Blue	8%	\$15
Black	8%	\$15
Pink	8%	\$15
Red	8%	\$15
Green	8%	\$15
Orange	9%	\$15
Grey	9%	\$15

Box U

	Chance	You win
Purple	??%	\$0
Yellow	??%	\$15
Brown	??%	\$15
Blue	??%	\$15
Black	??%	\$15
Pink	??%	\$15
Red	??%	\$15
Green	??%	\$15
Orange	??%	\$15
Grey	??%	\$15

Which box do you prefer?

Box K

Box U

Indifferent

NOTE: Go to Q8-1.

Q7-9: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K

	Chance	You win
Purple	15%	\$0
Yellow	9%	\$15
Brown	9%	\$15
Blue	9%	\$15
Black	9%	\$15
Pink	9%	\$15
Red	10%	\$15
Green	10%	\$15
Orange	10%	\$15
Grey	10%	\$15

Box U

	Chance	You win
Purple	??%	\$0
Yellow	??%	\$15
Brown	??%	\$15
Blue	??%	\$15
Black	??%	\$15
Pink	??%	\$15
Red	??%	\$15
Green	??%	\$15
Orange	??%	\$15
Grey	??%	\$15

Which box do you prefer?

Box K

Box U

Indifferent

NOTE: Go to Q8-1.

Q7-10: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	66%	\$0	Purple	?%	\$0
Yellow	3%	\$15	Yellow	?%	\$15
Brown	3%	\$15	Brown	?%	\$15
Blue	4%	\$15	Blue	?%	\$15
Black	4%	\$15	Black	?%	\$15
Pink	4%	\$15	Pink	?%	\$15
Red	4%	\$15	Red	?%	\$15
Green	4%	\$15	Green	?%	\$15
Orange	4%	\$15	Orange	?%	\$15
Grey	4%	\$15	Grey	?%	\$15

Which box do you prefer?

- Box K
 Box U
 Indifferent

NOTE: Go to Q8-1.

Q7-11: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
 Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K		Box U	
	Chance	You win	

Purple	5%	\$0	Purple	?%	\$0
Yellow	10%	\$15	Yellow	?%	\$15
Brown	10%	\$15	Brown	?%	\$15
Blue	10%	\$15	Blue	?%	\$15
Black	10%	\$15	Black	?%	\$15
Pink	11%	\$15	Pink	?%	\$15
Red	11%	\$15	Red	?%	\$15
Green	11%	\$15	Green	?%	\$15
Orange	11%	\$15	Orange	?%	\$15
Grey	11%	\$15	Grey	?%	\$15

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer =K, then follow up with Q7-12. If answer =U, then follow up with Q7-13. If indifferent go to Q8-1.

Q7-12: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.
Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K			Box U		
-----			-----		
	Chance	You win		Chance	You win
Purple	8%	\$0	Purple	?%	\$0
Yellow	10%	\$15	Yellow	?%	\$15
Brown	10%	\$15	Brown	?%	\$15
Blue	10%	\$15	Blue	?%	\$15
Black	10%	\$15	Black	?%	\$15
Pink	10%	\$15	Pink	?%	\$15
Red	10%	\$15	Red	?%	\$15
Green	10%	\$15	Green	?%	\$15
Orange	11%	\$15	Orange	?%	\$15
Grey	11%	\$15	Grey	?%	\$15

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: Go to Q8-1.

Q7-13: In the next question you can choose either **Box K or Box U**. Both hold 100 balls with 10 different colors.

Box K holds 10 different colors of balls, and the exact mix is given below.

Box U also holds 10 different colors of balls, but the mix is unknown.

In other words, both boxes hold 100 balls with ten different colors. The mix of balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if the ball drawn is NOT purple.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	2%	\$0	Purple	??%	\$0
Yellow	10%	\$15	Yellow	??%	\$15
Brown	11%	\$15	Brown	??%	\$15
Blue	11%	\$15	Blue	??%	\$15
Black	11%	\$15	Black	??%	\$15
Pink	11%	\$15	Pink	??%	\$15
Red	11%	\$15	Red	??%	\$15
Green	11%	\$15	Green	??%	\$15
Orange	11%	\$15	Orange	??%	\$15
Grey	11%	\$15	Grey	??%	\$15

Which box do you prefer?

Box K

Box U

Indifferent

NOTE: Go to Q8-1.

VIII. Ambiguity check questions (2-ball, 50%)

PROGRAMMER NOTES:

Calculate the variable MP^{50}_{match} (the matching probability for the 50% question), using the two variables MP^{50}_{low} and MP^{50}_{up} (the lower and upper bounds) stored during question Q5:

$$MP^{50}_{match} = (MP^{50}_{low} + MP^{50}_{up}) / 2$$

We now use MP^{50}_{match} to generate the known probability of winning for question Q8-1 and Q8-2, KP_1 and KP_2 :

$$KP_1 = \max(MP^{50}_{match} - 10, 1)$$

$$KP_2 = \min(MP^{50}_{match} + 10, 100)$$

Q8-1: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	$\{KP_1\}\%$	\$15	Purple	? %	\$15
Orange	$\{1-KP_1\}\%$	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

Q8-2: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will win \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You win		Chance	You win
Purple	$\{KP_2\}\%$	\$15	Purple	? %	\$15
Orange	$\{1-KP_2\}\%$	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

IX. Ambiguity loss questions (2-ball, 50%)

Instructions:

- You will again be asked to choose between two boxes, Box U and Box K. Each box contains 100 balls of different colors. One ball will be drawn randomly from the box you choose.
- Here some of the outcomes involve monetary losses, but you will not actually win or lose money for answering any individual question.

Q9-1: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You lose		Chance	You lose
Purple	50%	-\$15	Purple	? %	-\$15
Orange	50%	\$0	Orange	? %	\$0

Which box do you prefer?

- Box K Box U
 Indifferent

NOTE: If answer =K, then follow up with Q9-2. If answer =U, then follow up with Q9-9. If indifferent go to Q10-1 BRANCHPOINT.

Q9-2: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You lose		Chance	You lose
Purple	75%	-\$15	Purple	? %	-\$15
Orange	25%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer = K, then follow up with Q9-3. If answer = U then follow up with Q9-6. If indifferent go to Q10-1 BRANCHPOINT.

Q9-3: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You lose		Chance	You lose
Purple	88%	-\$15	Purple	? %	-\$15
Orange	12%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer = K, then follow up with Q9-4. If answer = U then follow up with Q9-5. If indifferent go to Q10-1 BRANCHPOINT.

Q9-4: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
	Chance	You lose		Chance	You lose
Purple	94%	-\$15	Purple	? %	-\$15

Orange **6%** \$0 Orange ? % \$0

Which box do you prefer?

- Box K Box U
 Indifferent

NOTE: Go to Q10-1 BRANCHPOINT.

Q9-5: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K		Box U	
-----		-----	
Chance	You lose	Chance	You lose
Purple 82%	-\$15	Purple ? %	-\$15
Orange 18%	\$0	Orange ? %	\$0

Which box do you prefer?

- Box K Box U
 Indifferent

NOTE: Go to Q10-1 BRANCHPOINT.

Q9-6: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K		Box U	
-----		-----	
Chance	You lose	Chance	You lose
Purple 62%	-\$15	Purple ? %	-\$15

Orange **38%** \$0 Orange ? % \$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: If answer =K, then follow up with Q9-7. If answer=U then follow up with Q9-8. If indifferent go to Q10-1 BRANCHPOINT.

Q9-7: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K		Box U	
-----		-----	
Chance	You lose	Chance	You lose
Purple 68%	-\$15	Purple ? %	-\$15
Orange 32%	\$0	Orange ? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: Go to Q10-1 BRANCHPOINT.

Q9-8: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.

Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K		Box U	
-----		-----	
Chance	You lose	Chance	You lose

Purple	56%	-\$15	Purple	? %	-\$15
Orange	44%	\$0	Orange	? %	\$0

Which box do you prefer?

- Box K
 Indifferent
 Box U

NOTE: Go to Q10-1 BRANCHPOINT.

Q9-9: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You lose		Chance	You lose
Purple	25%	-\$15	Purple	? %	-\$15
Orange	75%	\$0	Orange	? %	\$0

Which box do you prefer?

- Box K
 Indifferent
 Box U

NOTE: If answer =K, then follow up with Q9-10. If answer=U then follow up with Q9-13. If indifferent go to Q10-1 BRANCHPOINT.

Q9-10: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You lose		Chance	You lose

Yellow	38%	-\$15	Yellow	? %	-\$15
Orange	62%	\$0	Orange	? %	\$0

Which box do you prefer?

- Box K
 Indifferent
 Box U

NOTE: If answer =K, then follow up with Q9-11. If answer=U then follow up with Q9-12. If indifferent go to Q10-1 BRANCHPOINT.

Q9-11: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You lose		Chance	You lose
Purple	44%	-\$15	Purple	? %	-\$15
Orange	56%	\$0	Orange	? %	\$0

Which box do you prefer?

- Box K
 Indifferent
 Box U

NOTE: Go to Q10-1 BRANCHPOINT.

Q9-12: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below. Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		

	Chance	You lose		Chance	You lose
Purple	32%	-\$15	Purple	? %	-\$15
Orange	68%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: Go to Q10-1 BRANCHPOINT.

Q9-13: In the next question you can choose either **Box K or Box U**. Both hold 100 balls which can either be purple or orange.

For Box K, the exact mix of purple balls and orange balls is given below.
 Box U also holds purple and orange balls, but the mix is unknown.

In other words, both boxes hold 100 balls with two different colors (purple and orange). The mix of purple and orange balls is known for Box K and unknown for Box U.

One ball will be drawn at random from the box you choose. You will lose \$15 if a purple ball is drawn.

Box K			Box U		
-----			-----		
	Chance	You lose		Chance	You lose
Purple	12%	-\$15	Purple	? %	-\$15
Orange	88%	\$0	Orange	? %	\$0

Which box do you prefer?

Box K Box U
 Indifferent

NOTE: Go to Q10-1 BRANCHPOINT.

Q10-1 branchpoint:

- **If Random_Ambiguity=2, go to Q2-1. Else go to Q10-1**

In words: If R did not yet answer the risk aversion questions, go to Q2-1. Else go to Q10-1

Instructions:

- We have a few final questions that we ask you to answer before finishing up. Thank you for your patience!

X. [Trust question]

Q10-1_TRUST-1 Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please indicate on a score of 0 to 5.

Most people can be trusted						You can't be too careful	Don't know
	0	1	2	3	4	5	
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10-2_TRUST_STOCKMARKET: Suppose that you were to invest in the stock market: how worried are you about suffering a large loss due to fraud?

- 1) Very high
- 2) High
- 3) Moderate
- 4) Low
- 5) Very low

Q10-3_TRUST_INSURANCE: Suppose that you bought health insurance from an insurance company. After having appendix surgery, you claim a reimbursement for your medical bills. What do you think the chances are that the insurance company will refuse to pay your claim?

- 1) Very high
- 2) High
- 3) Moderate
- 4) Low
- 5) Very low

XI. WRAP UP

Q11-1 Did you find the questions clear? Were they:

1. Unclear
2. More or less clear
3. Mostly clear
4. Very clear.
5. DK/RF

Answer __

See below for instructions about randomizing the prize \$

Depending on the outcome, tell the respondent the following:

“As we mentioned earlier, one of your choices was randomly selected and played for a chance to win real money. Congratulations! You have won \$15. This will be credited to your account.”

OR

“As we mentioned earlier, one of your choices was randomly selected and played for a chance to win real money. Unfortunately, your choice was not selected by the computer to win additional money this time.”

NOTE TO PROGRAMMER: Below is a set of rules for determining who wins and who does not.

1. Randomly select one of the three ambiguity questions. Each question has a 1/3 chance of selection. **Record which question is selected and output this variable.**
2. Once a question is selected, randomly select one of the rounds of that question. Each round of the question should have an equal probability of being selected. (The number of rounds will vary across subjects, so this part is a little trickier). E.g., if there were four rounds then each round has a 1/4 chance of selection.
3. Determine the subject's choice for that round. If the subject selected "Indifferent", randomly choose Box K or Box U for them (50% chance of selecting either box).
4. If the subject's choice is Box K, with known probabilities, then the winning probability is explicitly stated. Generate a random number based on that probability to determine whether or not the subject wins. E.g., if the winning probability is 40%, generate a random number between 0 and 1 from a uniform distribution; the subject wins if the random number is in [0, 0.40] and loses if the random number is in (0.40, 1].
5. If the subject's choice is Box U, with ambiguous probabilities, then the winning probability is generated as follows:
 - For the unknown box U of the 50% question:*
 - Chance: Purple balls
 - 1/3: 40 purple balls
 - 1/3: 50 purple balls
 - 1/3: 60 purple balls
 - For the unknown box U of the 10% question:*
 - Chance: Purple balls
 - 1/3: 5 purple balls
 - 1/3: 10 purple balls
 - 1/3: 15 purple balls
 - For the unknown box U of the 90% question:*
 - Chance: Purple balls
 - 1/3: 85 purple balls
 - 1/3: 90 purple balls
 - 1/3: 95 purple balls

So, one uniform random number needs to be drawn to determine the composition of box U. Next generate a random number to determine whether the subject wins.

Display the appropriate text about the prize amount.

Record and output which question was selected for determining the reward and what the reward was. Depending on the outcome, tell the respondent the following:

“As we mentioned earlier, one of your choices was randomly selected and played for a chance to win real money. Congratulations! You have won \$15. This will be credited to your account.”

OR

“As we mentioned earlier, one of your choices was randomly selected and played for a chance to win real money. Unfortunately, your choice was not selected by the computer to win additional money this time.”