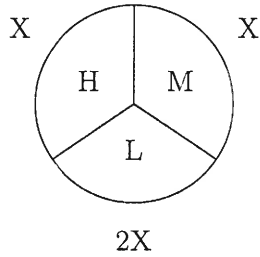


Name:

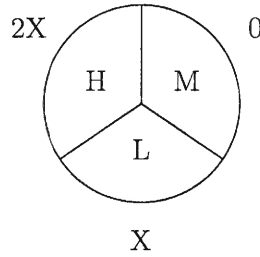
Quiz 5

1. Two people decide to use "I cut, you choose" to divide a pie that has three types of berries in it, Huckleberry (H), Mulberry (M), and Loganberry (L).

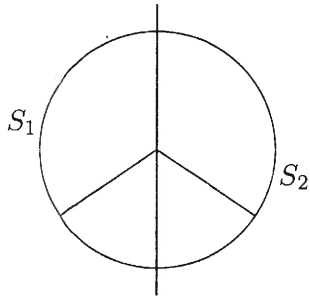
D's preferences



C's preferences:



Suppose D divides the pie this way:



What fraction of the pie does C think S_1 is worth?

Which piece does each player get?

Is this division fair? (yes/no)

Is this division equitable? Why?

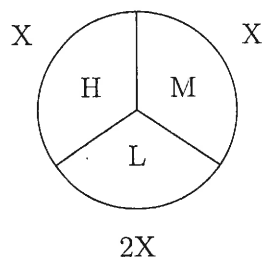
2. True or False: I Cut You Choose will always produce an envy-free division.

Name: *Solutions*

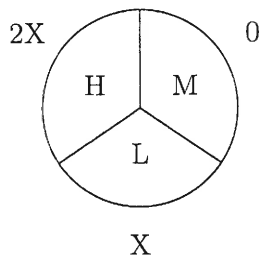
Quiz 5

1. Two people decide to use "I cut, you choose" to divide a pie that has three types of berries in it, Huckleberry (H), Mulberry (M), and Loganberry (L).

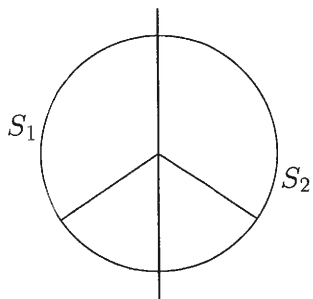
D's preferences



C's preferences:



Suppose D divides the pie this way:



What fraction of the pie does C think S_1 is worth?

$$S_1 = \frac{120(2x) + 60(x)}{120(2x) + 120(x) + 0} = \frac{240x + 60x}{120(3x)} = \frac{300x}{120(3x)} = \frac{100}{120} = \frac{10}{12} = \frac{5}{6}$$

Which piece does each player get?

$$C - S_1, \quad D - S_2$$

Is this division fair? (yes/no)

Yes.

Is this division equitable? Why?

No. $S_1/6 \neq 1/2$

2. True or False: I Cut You Choose will always produce an envy-free division. *True*