TRUE/FALSE (2 points each) Answer the following questions by writing a T or F in the blank.

____T____ 1. If I split a cake with somebody using the “You Cut/I Choose” method, it is possible that my fair share will be worth more than 50% to me.

   Look in your book: the chooser might get a piece worth more than 50% to her.

____T____ 2. Whether or not my piece of a cake is a fair share only depends on my perceptions, and not what any other player thinks about my piece.

____T____ 3. In the Lone Chooser method, with 3 players, the cake will be split into 6 pieces before the Chooser actually chooses anything.

____F____ 4. 10 players are splitting a cake using the Last Diminisher method, and it is $P_4$’s turn during the first round. If $P_4$ thinks the current piece is worth exactly 10%, then she will choose to play, cut off a slice, and claim the new C-piece. (Think carefully here!)

   If $P_4$ chooses to play, he has to cut off part of the C-piece, which would make it worth less than 10%, so it wouldn’t be a fair share anymore.

____F____ 5. If there are four players sharing a cake, then a “fair share” for a player is any piece that she thinks is worth at least $\frac{33\frac{1}{3}}{4}$% of the total cake.

   100% divided by 4 players is 25%.

5. My son and two nephews split a cupcake using the Lone Divider method. The Divider cuts three pieces, $s_1$, $s_2$, and $s_3$. The following table shows how much each piece is worth to each player.

<table>
<thead>
<tr>
<th></th>
<th>$s_1$</th>
<th>$s_2$</th>
<th>$s_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$D$</td>
<td>$\frac{33\frac{1}{3}}{4}$%</td>
<td>$\frac{33\frac{1}{3}}{3}$%</td>
<td>$\frac{33\frac{1}{3}}{4}$%</td>
</tr>
<tr>
<td>$C_1$</td>
<td>$20%$</td>
<td>$20%$</td>
<td>$60%$</td>
</tr>
<tr>
<td>$C_2$</td>
<td>$20%$</td>
<td>$40%$</td>
<td>$40%$</td>
</tr>
</tbody>
</table>

Write down $C_1$’s bid and $C_2$’s bid. (2 Points)

   $C_1 : \{s_3\}$
   $C_2 : \{s_2, s_3\}$

Describe a fair division of the cupcake. (3 Points)

   $D$ gets $s_1$
   $C_1$ gets $s_3$
   $C_2$ gets $s_2$