

Group Members:

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|----------|----------|----------|
| 1. _____ | (scribe) | 3. _____ |
| 2. _____ | | 4. _____ |

- 2. Now some number n of schools are going to send their baseball teams to a tournament, and each team must play each other team exactly once. Let us think of the teams as numbered 1 through n .
 - (a) How many games does team 1 have to play in?
 - (b) How many games, other than the one with team 1, does team two have to play in?
 - (c) How many games, other than those with the first $i - 1$ teams, does team i have to play in?
 - (d) In terms of your answers to the previous parts of this problem, what is the total number of games that must be played?

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| 1. _____ (scribe) | 3. _____ |
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- 6. The coach of the team in Problem 3 knows of an ice cream parlor along the way where she plans to stop to buy each team member a triple decker cone. There are 12 different flavors of ice cream, and triple decker cones are made in homemade waffle cones. Having chocolate ice cream as the bottom scoop is different from having chocolate ice cream as the top scoop. How many possible ice cream cones are going to be available to the team members? How many cones with three different kinds of ice cream will be available?

Group Members:

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|-------------------|----------|
| 1. _____ (scribe) | 3. _____ |
| 2. _____ | 4. _____ |

- 8. A group of hungry team members in Problem 6 notices it would be cheaper to buy three pints of ice cream for them to split than to buy a triple decker cone for each of them, and that way they would get more ice cream. They ask their coach if they can buy three pints of ice cream.
 - (a) In how many ways can they choose three pints of different flavors out of the 12 flavors?
 - (b) In how many ways may they choose three pints if the flavors don't have to be different?