STUDENT A

Name_____

It's Your Lucky Day

J. Beans, Inc. produces two different flavor mixes at their jelly bean factory. Their most popular J. Beans are the Original Juicy Beans, but they also sell a surprising large quantity of their Junk Beans as well. If you look at flavor guides for these two mixtures, you will see that the Juicy Bean coconut flavor and the Junk Bean soap flavor look identical. Likewise, buttered popcorn and rotten egg look the same.

Ms. Chievous makes two bowls of jelly beans with her own unique mixture of flavors.

The tables show how many jelly beans of each flavor Ms. Chievous placed in the two bowls:

Bowl 1

Flavor	Number of Jelly Beans
Coconut	3
Soap	2

Bowl 2

Flavor	Number of Jelly Beans
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Rotten Egg	2

Ms. Chievous explains that she will select the name of one student who can have two of the jelly beans from her bowls. It is your lucky day, Ms. Chievous draws your name and asks if you are willing to choose two jelly beans and eat them in front of the entire class. You accept the challenge, but are really hoping to avoid having your mouth taste like it is filled with soap or a rotten egg.

Three of your best friends give you some advice.

Susan suggests that you pick two jelly beans from bowl 1.	Todd advises you to pick both jelly beans from bowl 2.	Jamie tells you that you should pick one jelly bean from each bowl.

Think this through carefully! Ms. Chievous will have the camera rolling as you eat each jelly bean. Whose advice should you follow? Jamie because you have a 60% chance then 66.6% chance which is a better chance

Explain your reasoning thoroughly enough to convince us that you are making the best out of your lucky day.

because- $\frac{2}{6}$ Rotten = 33.3% Bowl 2 $\frac{4}{6}$ Buttered = 66.6% Coconut $\frac{3}{5}$ = 60% Soap $\frac{2}{5}$ bowl 1 = 40%

STUDENT A

todd

$\frac{4}{6}$ $\frac{3}{5}$

66.6% 60%

Susan

$\frac{3}{5}$ $\frac{2}{4}$

60.0% 50%

STUDENT B

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STUDENT B

coconut = $\frac{3}{}$

soap = $\frac{}{2}$

butter pop. = $\frac{4}{2} = \frac{2}{1}$

rotten egg = $\frac{}{2}$

if you drew 1, you're chances of getting another P are $\frac{3}{2}$

S = soap
C = coconut

P = popcorn
R = rotten egg

bowl 1:
likely hood of you getting what you want is $\frac{3}{2}$ vs. bowl 2 has a greater chance of $\frac{4}{2}$, on your second turn however, if you got popcorn, you ratio would be $\frac{3}{8}$ in bowl #2, equal to bowl #1, therefor you could follow Todd or Jamie's advice. ~~Not sure you pick bowl #2 first and then bowl number one if you follow Jamies' advice or you might get a junk corn.~~

you could also pick first from bowl one. If you get what you want, the you would have a 50% chance of getting coconut the next time. Then you should go to bowl #2 and you'll have a better chance of getting buttered popcorn

STUDENT C

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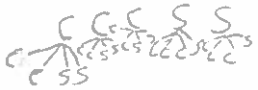
theyhavethe Same odds

STUDENT C

Bowl 1

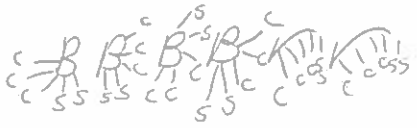


$\frac{6}{20} = 0.3 = 30\%$

1	2	3
$\frac{3}{5} \cdot \frac{2}{4} = 0.3 = 30\%$	$\frac{4}{6} \cdot \frac{3}{5} = 0.4 = 40\%$	$\frac{4}{6} \cdot \frac{3}{5} = 0.4 = 40\%$

Bowl 2

$\frac{12}{30} = 0.4 = 40\%$



$\frac{12}{30} = 0.4 = 40\%$

STUDENT D

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STUDENT D

$\frac{2}{5}$ 40% of picking soap

$\frac{3}{5}$ 60% of picking coconut

most likely to pick a good J.bean

least likely to pick a bad one

$\frac{2}{6}$ $33.3\overline{3}\%$ of picking rotton egg

$\frac{4}{6}$ $66.6\overline{6}\%$ of picking Buttered popcorn

$\frac{4}{11}$ $36.\overline{36}\%$ of picking a bad jellybean

$\frac{7}{11}$ $63.\overline{63}\%$ of picking a good bean

Bowl 2 would be the best to choose from, because you're least likely to pick a bad bean.

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STUDENT E

Bowl 1

Total of 5

$\frac{3}{5} \cdot \frac{2}{4} = \frac{6}{20} = \frac{3}{10} = 30\%$

↑

2 j.b. from bowl 1 = susan

Bowl

Total of 6

$\frac{4}{6} \cdot \frac{3}{5} = \frac{12}{30} = \frac{4}{10} = \frac{2}{5} = 40\%$

↑

2 j.b. from bowl 2 = todd

Bowl 1+2

$\frac{3}{5} \cdot \frac{4}{6} = \frac{12}{30} = \frac{2}{5} = 40\%$

↑

1 from each bowl = Jamie

You could follow Jamie's advice or Todd's advice because you would have the same chance. This is similar to my thinking before because I had the same answer but I didn't use the best mathmatical stragies.

The reason way the second numbers we mutiplyed are lower than the first is because it is a dependent varible, which means you don't replace it. And you can't replace it because When you eat something you can't replace it.

You also have to focus on the positive side of things in probability

"It's your lucky day!"

Personaly I would follow Todd's because I don't like coconut and you have the highest chance (the same as Jamie's) to get a good jelly bean.

STUDENT F

Name _____

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Todd

Explain your reasoning thoroughly enough to convince us that you are making the best out of your lucky day.

I would choose Todd because he has a 40% probability of getting a good jellybean. But, so does Jamie! However, if you figure out who has a higher chance of getting a bad jellybean, Jamie has a higher chance. Therefore, Todd is a better answer.

STUDENT F

Susan: out

$\frac{3}{5} \cdot \frac{2}{4} = \frac{6}{20} = \frac{3}{10} = 30\%$

Todd:

$\frac{4}{6} \cdot \frac{3}{5} = \frac{12}{30} = \frac{4}{10} = \frac{2}{5} = 40\%$

Jamie

$\frac{3}{5} \cdot \frac{4}{6} = \frac{12}{30} = \frac{4}{10} = 40\%$

chance of getting a bad job

Todd: $\frac{2}{6} \cdot \frac{1}{5} = \frac{2}{30} = \frac{1}{15} = 6.\overline{6}\%$

Jamie: $\frac{2}{5} \cdot \frac{2}{6} = \frac{4}{30} = \frac{2}{15} = 13.\overline{3}\%$