

Bikini Bottom Genetics

1. Given the allele combinations of characters shown, match the offspring to their parents

Offspring	Probability of receiving traits	Parent 1	Parent 2
A	100% blue eyes 100% attached earlobes 50% krabby AND medium height AND right-handed	SB	Sandy
B	25% green eyes AND detached earlobe 25% unkrabby AND toe-handed 0% short	patrick	pufferfish
C	6.25% Green eyes AND detached earlobes AND unkrabby AND short AND toe-handed	squward	gary
D	12.5% green eyes AND right-handed 100% attached earlobes AND krabby 50% medium height	krab	whalt
E	100% right-handed AND short AND krabby 0% black eyes AND attached earlobes	computer	plankton

2. Mr. Krabs has a daughter with Sandy Cheeks. However, they believe their daughter may have been switched at birth. Given the allele combinations presented and the trait probabilities of their child below, do you think their claim is valid?

75% krabby AND medium height
 100% green eyes AND detached earlobes
 0% left-handed

3. Turns out the Bikini Bottom Hospital is not great at recordkeeping. Karen and Squidward discover their son was switched at birth. Which son is most likely their son?

	Trait probabilities
A	100% black eyes 75% attached earlobes 25% krabby 25% medium height AND toe-handed
B	100% black eyes 25% detached earlobes 100% unkrabby AND tall AND toe-handed
C	100% black eyes 6.25% detached earlobes AND krabby AND tall 50% toe-handed