

Name: _____ Hour: _____ Date: _____



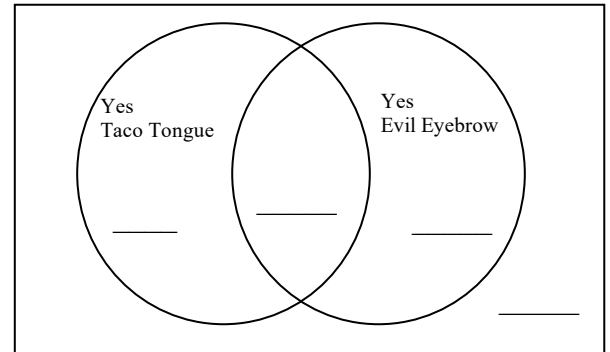
Can You Taco Tongue and Evil Eyebrow?



Some people believe that the ability to taco tongue and evil eyebrow is something that you are born with. Is this true? Are the two abilities somehow related?

1. Collect class data to fill in the following two-way table and Venn Diagram.

	Yes Evil Eyebrow	No Evil Eyebrow	Total
Yes Taco Tongue			
No Taco Tongue			
Total			



2. Suppose that we randomly choose a student from class. Find the following probabilities.

$$P(\text{Yes Taco Tongue}) =$$

$$P(\text{Yes Evil Eyebrow}) =$$

$$P(\text{No Taco Tongue}) =$$

$$P(\text{No Evil Eyebrow}) =$$

$$P(\text{Yes Taco Tongue AND Yes Evil Eyebrow}) =$$

$$P(\text{Yes Evil Eyebrow AND No Taco Tongue}) =$$

$$P(\text{Yes Taco Tongue AND No Evil Eyebrow}) =$$

$$P(\text{No Taco Tongue AND No Evil Eyebrow}) =$$

3. Suppose that we randomly choose a student from class. Find the following probabilities.

$$P(\text{Yes Evil Eyebrow}) =$$

$$P(\text{No Evil Eyebrow}) =$$

$$P(\text{Yes Evil Eyebrow OR No Evil Eyebrow}) =$$

4. Suppose that we randomly choose a student from class. Find the following probabilities.

$$P(\text{Yes Taco Tongue}) =$$

$$P(\text{Yes Evil Eyebrow}) =$$

$$P(\text{Yes Taco Tongue OR Yes Evil Eyebrow}) =$$

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Venn Diagrams, General Addition Rule

Important Ideas:

Check Your Understanding:

A random sample of high school students were surveyed regarding their toilet paper habits. Should the toilet paper pull over the roll? Do they replace the roll when it is empty? The two-way table displays the data. Suppose we choose a member of the sample at random. Define events O: Over and R: Replace.

		Prefer the toilet paper to pull over the roll	
		Yes	No
Replaces the roll when it is empty	Yes	58	24
	No	12	22

- Explain in plain language what $P(O^c)$ means and find the probability.
- Explain why $P(O \text{ or } R) \neq P(O) + P(R)$. Then find $P(O \text{ or } R)$.
- Make a Venn diagram to display the sample space of this chance process.
- Write the event “Does not replace the roll and prefers the toilet paper pulls over the roll” in symbolic form and find the probability.