

Name: Key Block: _____ Date: _____

Hair Color vs. Eye Color

Data was collected from 529 students regarding their hair color and eye color. The data is presented below in the table.

		Hair Color				
		Black	Brown	Red	Blonde	Total
Eye Color	Brown	68	119	26	7	220
	Blue	20	84	17	94	215
	Hazel	15	54	14	10	93
	Green	5	29	14	16	64
	Total	108	286	71	127	529

True or False? Provide the calculations to support your answer.

1. A student is approximately twice as likely to have blue eyes as they are to have black hair.

$$\frac{\text{Blue Eyed Students}}{\text{All Students}} = \frac{215}{529} = 40.6\% \quad \frac{\text{Black Haired Students}}{\text{All Students}} = \frac{108}{529} = 20.4\%$$

TRUE
40.6% is approx. 2 times 20.4%

2. Hazel eyed students and green eyed students are equally as likely to have red hair.

$$\frac{\text{Hazel with Red}}{\text{Total Hazel}} = \frac{14}{93} = 15.1\% \quad \frac{\text{Green with Red}}{\text{Total Green}} = \frac{14}{64} = 21.9\%$$

FALSE 15.1% ≠ 21.9%

3. Red haired students are more likely to have green eyes than brown haired students.

$$\frac{\text{Red with Green}}{\text{Total Red}} = \frac{14}{71} = 19.7\% \quad \frac{\text{Brown with Green}}{\text{Total Brown}} = \frac{29}{286} = 10.1\%$$

TRUE
19.7% > 10.1%

4. Black haired students are more likely to have brown eyes than brown eyed students are likely to have black hair.

$$\frac{\text{Black hair/Brown eyes}}{\text{Black Hair}} = \frac{68}{108} = 63.0\% \quad \frac{\text{Brown eyes/Black Hair}}{\text{Brown eyes}} = \frac{68}{220} = 30.9\%$$

TRUE 63.0% > 30.9%

5. Of all the students, blonde haired students are the most likely to have blue eyes.

$$\frac{\text{Blonde/Blue}}{\text{Blonde}} = \frac{94}{127} = 74\% \quad \frac{\text{Red/Blue}}{\text{Red}} = \frac{17}{71} = 23.9\% \quad \frac{\text{Brown/Blue}}{\text{Brown}} = \frac{84}{286} = 29.4\%$$

TRUE

$$\frac{\text{Black/Blue}}{\text{Black}} = \frac{20}{108} = 18.5\%$$