TEXAS A&M UNIVERSITY
Math Learning Center

Part 1. General definitions

1. Which is the average or arithmetic mean of 1, 2, 3 and 4? _____.

_____

A class has 20 students where 3 of them are left-handed.

2. Which is the fraction of left-handed in the class? _____.

3. Which is the percentage of left-handed in the class? _____.

4. Which is the proportion in decimals of left-handed in the class_____.

_____

5. $\dfrac{48+45+47+44}{4} =$

6. $(-3)^2 =$

7. $10 + 5 * 3 =$

8. Solve the following equation for X:

$$2 = \frac{x-1}{6}$$

9. Which is bigger?

   a) -2 or -1   _____.

    b) |-3| or |2| _____.

_____

Part 2 – Statistical Analysis and Design for Data Collection

QuickStats: Percentage* of Children Aged 6–17 Years Who Wear Glasses or Contact Lenses,[†] by Sex and Age Group — National Health Interview Survey, 2016[§]

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Source: National Center for Health Statistics. National Health Interview Survey, 2016. https://www.cdc.gov/nchs/nhis.htm.
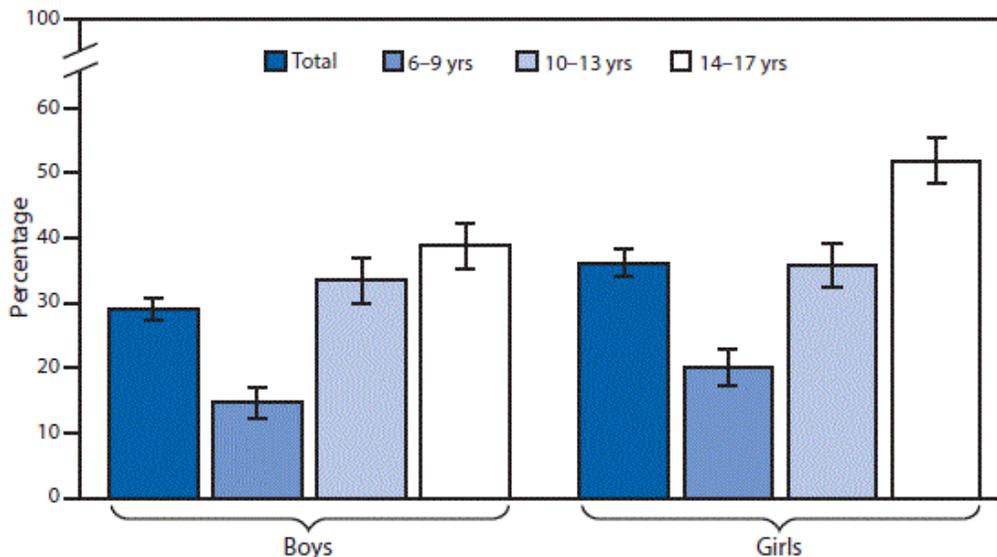
[†] Based on the survey response of "yes" to the question "Does (child's name) wear eyeglasses or contact lenses?" Children who are blind were excluded from these estimates.

[§] Estimates are based on household interviews of a sample of the civilian, noninstitutionalized U.S. population and are derived from the National Health Interview Survey Sample Child component.

1. **Main research question:**
2. **Which is the group of interest (aka population)?**
3. **Which are the characteristics of interest (aka variables)?**
4. **Among both girls and boys, which age group is more likely to wear eyeglasses or contact lenses?**

_____

5. **Among both girls and boys, which age group is less likely to wear eyeglasses or contact lenses?**

_____

6. **Which of the following best describes the purpose of selecting a sample?**

   a. To get information about some population
   b. To get information only about the sample
   c. To take a census
   d. To bias the results towards a certain answer

7. **Taylor Swift wants to know the proportion of her fans who want her to sing New Romantics at tomorrow's concert. In order to estimate this, she takes a sample of 150 of her fans and asks them if they want her to sing this song. Of the 150 fans, 90 of them (60%) want her to sing New Romantics. What is the statistic and what is its value?**

   a. The statistic is the proportion of all Taylor Swift fans who want her to sing New Romantics, which is 0.6.
   b. The statistic is the proportion of the 150 sampled Taylor Swift fans who want her to sing New Romantics, which is 90.
   c. The statistic is the proportion of the 150 sampled Taylor Swift fans who want her to sing New Romantics, which is 0.60.
   d. The statistic is the proportion of all Taylor Swift fans who want her to sing New Romantics, which is unknown.
   e. The statistic is the group of Taylor Swift fans who want her to sing New Romantics.

8. **In an election district, 73% of all registered voters are Democrat. A survey of a simple random sample of 500 voters from this district had 68% Democrats. Identify the parameter(s) and statistic(s)**

   1. Both 68% and 73% are statistics.
   2. Both 68% and 73% are parameters.
   3. 73% is a parameter and 68% is a statistic.
   4. 73% is a statistic and 68% is a parameter.
   5. 73% and 500 are statistics and 68% is a parameter.