

The following table displays the results of a sample of subjects in which each person indicated his/her favorite sport of the three listed. The data are organized in a two-way table by sport and age-group.

Age	Football	Baseball	Soccer	Totals
Over 40	16	7	8	31
Between 20 and 40	19	12	19	50
Under 20	7	6	9	22
Totals	42	25	36	103

In the table below, fill in the expected value of those interested in a sport that are in that age range if *age* is independent of *sport preference*.

Formulas				Results			
Age	Football	Baseball	Soccer	Age	Football	Baseball	Soccer
Over 40	$\frac{42 \times 31}{103}$	$\frac{25 \times 31}{103}$	$\frac{36 \times 31}{103}$	Over 40	12.6	7.5	10.8
Between 20 and 40	$\frac{42 \times 50}{103}$	$\frac{25 \times 50}{103}$	$\frac{36 \times 50}{103}$	Between 20 and 40	20.4	12.1	17.5
Under 20	$\frac{42 \times 22}{103}$	$\frac{25 \times 22}{103}$	$\frac{36 \times 22}{103}$	Under 20	9.0	5.3	7.7

$\frac{42}{103}$ What proportion of people indicated football was their favorite sport?

$\frac{26}{42}$ What proportion of those that like football are over 40?

$\frac{26}{31}$ What proportion of those over 40 like football?

$\frac{31}{103}$ What proportion of respondents are over 40?

Explanatory: The term used to refer to the variable that *appears* to “cause”

Response: The term used to refer to the variable that *appears* to be caused by the other variable

Using the area below, create a 100% segmented bar graph – properly labeled with legend.

