

Probability of independent events: Decimal answers

QUESTION

At a local college, 198 of the male students are smokers and 792 are non-smokers. Of the female students, 220 are smokers and 780 are non-smokers. A male student and a female student from the college are randomly selected for a survey. What is the probability that both are smokers?

Do not round your answer. (If necessary, consult a [list of formulas](#).)

We need total males and females

$$\begin{array}{r} 198 \\ + 792 \\ \hline 990 \end{array} \quad \begin{array}{r} 220 \\ + 780 \\ \hline 1000 \end{array}$$

Look at individually, then multiply

$$\frac{\text{male smokers}}{\text{total male}} \cdot \frac{\text{female smoker}}{\text{total female}} = \frac{198}{990} \cdot \frac{220}{1000} = \frac{198 \cdot 220}{990 \cdot 1000} = \frac{43,560}{990,000} = \boxed{0.044}$$