

Name the appropriate inference procedure for each problem, along with the degrees of freedom (if appropriate).

1. A researcher wonders if meat in the diet may be a factor in high blood pressure. She compares the blood pressures of 40 randomly selected vegetarians, to those of 40 people who eat meat. A test of significance is conducted at the $\alpha = 0.05$ level of significance.
2. According to the American Red Cross, 45% of Americans have Type O blood, 40% Type A, 11% Type B, and 4% Type AB. Last week a blood drive at the high school collected 132 pints of blood. If 51 were Type O, 55 Type A, 17 Type B, and 9 were Type AB, was this yield unusual in any way?
3. Among a random sample of college-age drivers, 5% of the 576 men said they had been ticketed for speeding during the past year, compared to only 3% of the 552 women. At the 5% level of significance, does this indicate a significant difference between college males and females in terms of being ticketed for speeding?
4. Who is paid more in New York State – teachers or policemen? We select a random sample of 25 New York cities and find the starting salaries of teachers and policemen in each. The difference in mean salaries between the two professions is estimated by a 90% confidence interval.
5. A college admissions counselor was interested in finding out how well high school grade point averages predict first year college GPAs. A random sample of data from 26 first-year students was reviewed. Is there evidence of an association between high school and first-year college GPAs?
6. A large family recorded their favorite ice cream flavors by gender. Is there evidence of an association between gender and favorite flavor of ice cream?

	Chocolate	Vanilla	Strawberry
Male	32	14	3
Female	16	4	10

7. A health professional selected a random sample of 100 patients from each of four major hospital emergency rooms to see if the primary reasons for emergency room visits are similar in all four major hospitals. The primary reasons were categorized as accident, illegal activity, illness, or other.
8. A teacher believes that no more than 10% of high school students ever cheat on an exam, but a confidential survey found that 14 of 88 randomly selected students admitted having cheated at least once. Is this strong evidence that the teacher was wrong?
9. A geneticist hypothesizes that half of a given population will have brown eyes and the remaining half will be split evenly between blue- and green-eyed people. In a random sample of 60 people from this population, the individuals are distributed as shown in the table below.

	Brown Eyes	Green Eyes	Blue Eyes
	34	15	11

Do the eye colors of this sample fit the proportions in the given population?

10. The following data was collected concerning waist sizes of men and women.

Men	33	32	30	34	34	40	35	35	32	34	32	35	32	32	34	36	30	38
Women	23	29	27	24	28	28	27	26	27	27	25	23						

Do these data present sufficient evidence to conclude that men have larger mean waist sizes than women at the 0.05 level of significance?