

- Determine the mean, variance, and standard deviation for the data give below *if the data is for a*
 - sample.
 - population.

Data: 2, 2, 3, 3, 3, 4, 6, 6, 6, 6, 8, 8, 8

- Your Cultural Anthropology instructor offers you the opportunity to assist her by analyzing some data that she collected between September 25, 1986 and October 18, 1987 regarding the male residents of the Gwaimasi Village in the New Guinea rain forest. Delighted that you can put your knowledge of statistics to use, you accept her offer, and she gives you the data. Examining the data , you find that, for this study period, she has collected information about fifteen (15) male members of the village together with their age, their status in the village, the number of nights that each male spent in the hunting area, and the amount, in kilograms, of food, Pig, Cassowary, Spear Fish, or Hook Fish, that each caught.

| Name | Age | Status | Number of Nights in Hunting Area | Pig | Cassowary | Spear Fish | Hook Fish |
|---------|-----|------------------|----------------------------------|----------|-----------|------------|-----------|
| Bisaeo | 45 | Married | 327 | 10.9872 | 0 | 8.0769 | 2.4852 |
| Gugwi | 45 | Married | 363 | 1.452 | 0 | 54.0507 | 13.5762 |
| Wodai | 45 | Widower | 43 | 0 | 0 | 0 | 12.1174 |
| Mamo | 40 | Married | 310 | 169.849 | 107.26 | 11.687 | 3.379 |
| Simo | 35 | Married | 295 | 64.9885 | 6.49 | 3.3335 | 21.8005 |
| Gwase | 28 | Bachelor/Married | 346 | 99.9594 | 11.3834 | 10.3108 | 12.0062 |
| Tufa | 25 | Bachelor/Married | 155 | 0 | 0 | 2.2475 | 2.666 |
| Gwuho | 25 | Bachelor | 136 | 6.2424 | 0 | 1.9856 | 7.0856 |
| Filifi | 25 | Bachelor | 274 | 289.6728 | 9.4256 | 30.688 | 0.9042 |
| Sinio | 22 | Married | 267 | 169.9188 | 43.8681 | 52.1985 | 8.01 |
| Maubo | 20 | Youth | 362 | 32.4714 | 3.258 | 16.2176 | 27.9102 |
| Dogo | 15 | Youth | 314 | 42.7354 | 0 | 11.8064 | 14.8522 |
| Hegogwa | 15 | Youth | 122 | 0 | 0 | 3.782 | 15.8722 |
| Gawua | 10 | Child | 263 | 0 | 0 | 0 | 2.0251 |
| Okre | 3 | Child | 355 | 0 | 0 | 0 | 0 |

- What is the average age for the male residents of the Gwaimasi Village in the New Guinea rain forest?
 - What is the standard deviation for the age of the male residents of the Gwaimasi Village in the New Guinea rain forest?
 - What is the average number of nights that the male residents of the Gwaimasi Village spent in the hunting area?
 - What is the standard deviation for the number of nights that the male residents of the Gwaimasi Village spent in the hunting area?
- A random sample of thirty-six (36) married couples who had been married for seven years was surveyed regarding the number of children they had. The results of the survey are given below.

0 0 3 1 2 3 4 2 3 2 2 4 3 4 3 3 0 3
 0 3 3 3 2 1 1 2 1 3 0 3 2 1 3 4 1 3

- Determine the mean for the number of children that the sample of married couples had during their seven years of marriage.
- Determine the standard deviation for the number of children that the sample of married couples had during their seven years of marriage.

4. For one of your STAT 117 Introduction to Statistics assignments, you decide to do a comparison of textbook prices. You collect the following data regarding the prices for selected course textbooks available at the Framingham State University bookstore and a popular online bookstore. When the manager of the bookstore finds out about the information that you have collected (s)he asks you to determine the mean and standard deviation for various groups of these textbooks.

| Type | College Bookstore | On-Line Bookstore |
|-------------------|-------------------|-------------------|
| Chemistry | 93 | 94 |
| Classic Tale | 10 | 8 |
| English Anthology | 47 | 49 |
| Calculus | 76 | 94 |
| Biology | 87 | 81 |
| Statistics | 8 | 6 |
| Dictionary | 24 | 17 |
| Style Manual | 13 | 11 |
| Art History | 66 | 46 |

- (a) Determine the mean and standard deviation of the prices for the *non-science/non-mathematics* textbooks for the (i) *online bookstore*. (ii) *college bookstore*.
- (b) Determine the mean and standard deviation of the prices for the *science/mathematics* textbooks for the (i) *online bookstore*. (ii) *college bookstore*.
- (c) Determine the mean and standard deviation of the prices for the textbooks for the (i) *online bookstore*. (ii) *college bookstore*.
5. For your summer internship with *the Zoological Society of San Diego*, you are asked to analyze data for the twenty (20) mammals being studied by the Society. For your analysis, you obtain information for the gestation period, in days, the life span, in years, determining both the average life span and the maximum life span, and the average speed, in miles per hour, for these mammals as well as if the mammals are considered to be wild or considered to be predators.

| Mammal | Gestation Period | Average Life Span | Maximum Life Span | Average Speed | Wild | Predator |
|--------------|------------------|-------------------|-------------------|---------------|------|----------|
| Rabbit | 31 | 5 | 13 | 35 | No | No |
| Chipmunk | 31 | 6 | 8 | 10 | Yes | No |
| Kangaroo | 36 | 7 | 24 | 40 | Yes | No |
| Deer | 201 | 8 | 20 | 30 | Yes | No |
| Pig | 112 | 10 | 27 | 11 | No | No |
| Squirrel | 44 | 10 | 23 | 12 | Yes | No |
| Giraffe | 425 | 10 | 34 | 32 | Yes | No |
| Donkey | 365 | 12 | 47 | 40 | No | No |
| Zebra | 365 | 15 | 50 | 40 | Yes | No |
| Elk | 250 | 15 | 27 | 45 | Yes | No |
| Horse | 330 | 20 | 50 | 48 | No | No |
| Elephant | 660 | 35 | 70 | 25 | Yes | No |
| Hippopotamus | 238 | 41 | 54 | 20 | Yes | No |
| Opossum | 13 | 1 | 5 | 7 | Yes | Yes |
| Fox | 52 | 7 | 14 | 42 | Yes | Yes |
| Cat | 63 | 12 | 28 | 30 | No | Yes |
| Dog | 61 | 12 | 20 | 39 | No | Yes |
| Cheetah | 93 | 14 | 20 | 70 | Yes | Yes |
| Lion | 100 | 15 | 30 | 50 | Yes | Yes |
| Grizzly bear | 225 | 25 | 50 | 30 | Yes | Yes |

- (a) For part of your investigation of the mammals being studied by the Society, you find it necessary to examine the mammals *that are considered to be predators*. Since you need to determine the standard deviation for the (i) gestation period, (ii) maximum life span, (iii) average life span, and (iv) average speed for *these* mammals for this part of the analysis, you need to know if you must calculate a population standard deviation or a sample standard deviation. Explain, using one (1) sentence, why you determine the population standard deviation or the sample standard deviation.
- (b) For part of your investigation of the mammals being studied by the Society, you find it necessary to examine the mammals *that are considered to be predators*. For these mammals, determine the mean and standard deviation for the (i) gestation period, (ii) maximum life span, (iii) average life span, and (iv) average speed.