

Math 10: Exam 1

You will not receive full credit if you do not clearly show work as demonstrated in class. Show all work in the space provided on this exam. Circle your answers.

1. A random sample of ten trees is selected from the population of trees in a particular forest. These trees are then tested to determine their ages. The ages of the ten trees (in years) are:

45, 61, 62, 54, 52, 25, 43, 50, 44, 54

- a. Calculate the median for this data. (5 points)
- b. Calculate the sample mean for this data. (5 points)
- c. Calculate the midrange for this data. (4 points)
- d. Find the mode for this data. (If there is no mode then write *no mode*.) (4 points)
- e. Calculate the sample variance for this data. (8 points)

1. Continued from the previous page. (Data: 45, 61, 62, 54, 52, 25, 43, 50, 44, 54)

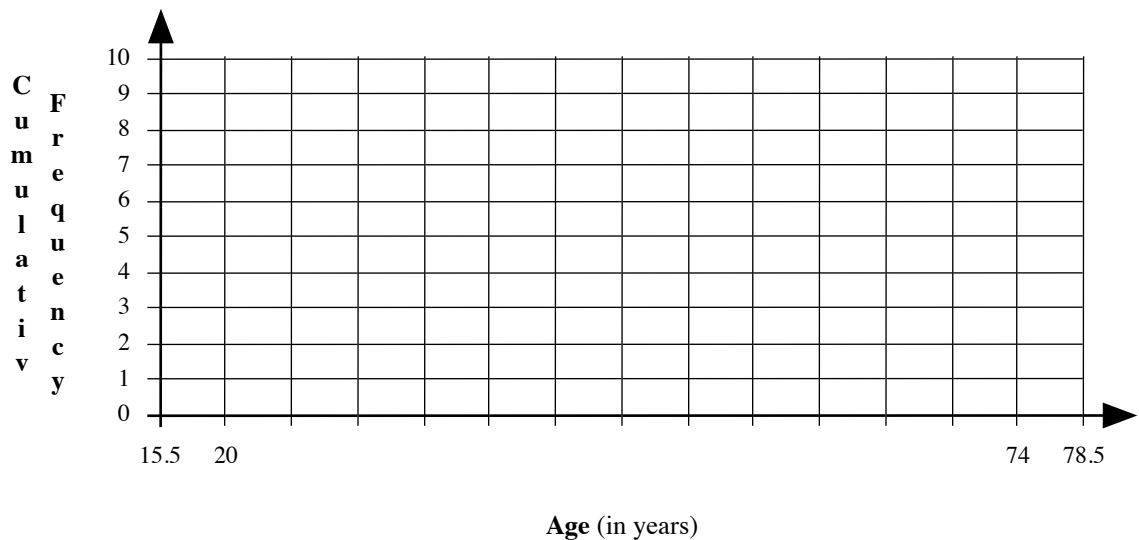
f. Calculate the sample standard deviation for this data. (2 points)

g. Calculate the range for this data. (4 points)

h. Complete the frequency table below. (28 points)

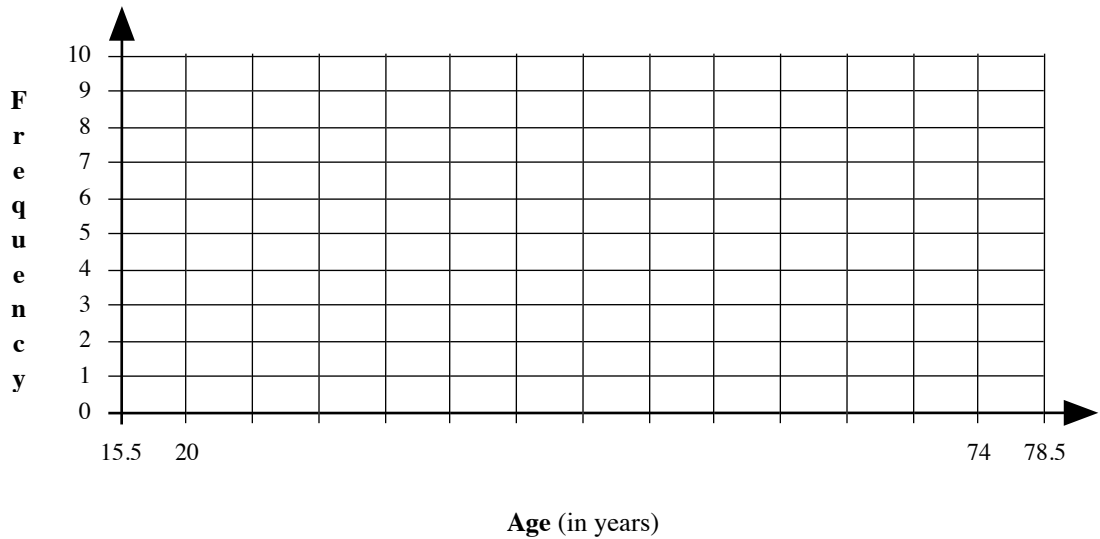
<u>Class Limits</u>	<u>Class Boundaries</u>	<u>Class Midpoint</u>	<u>Tally</u>	<u>Frequency</u>	<u>Cumulative Frequency</u>
16-24	_____ - _____	_____	_____	_____	_____
25-33	_____ - _____	_____	_____	_____	_____
34-42	_____ - _____	_____	_____	_____	_____
43-51	_____ - _____	_____	_____	_____	_____
52-60	_____ - _____	_____	_____	_____	_____
61-69	_____ - _____	_____	_____	_____	_____
70-78	_____ - _____	_____	_____	_____	_____

i. Finish labeling the units on the horizontal axis, and plot the ogive for this data. (12 points)

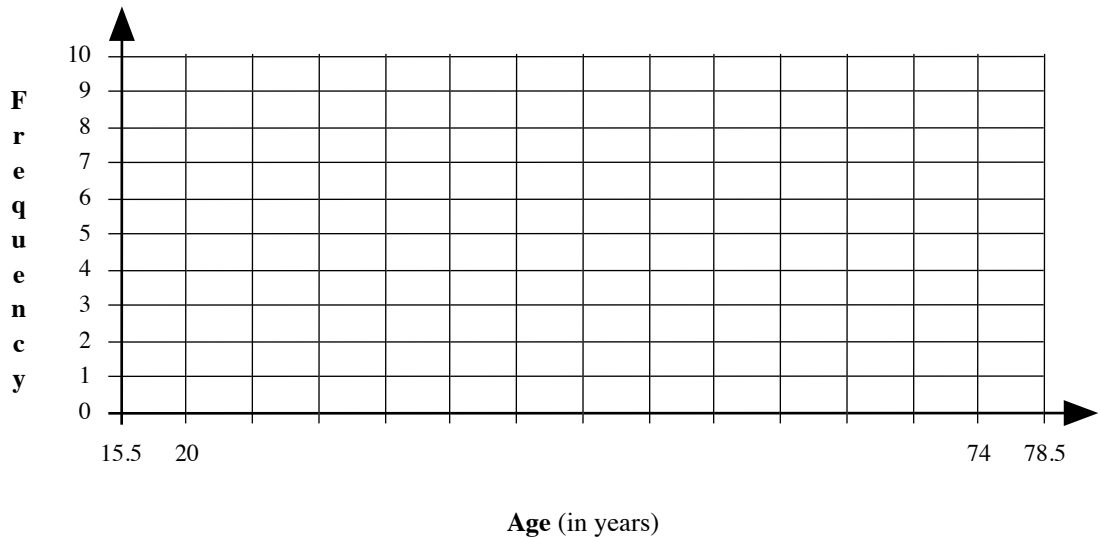


1. Continued from the previous page. (Data: 45, 61, 62, 54, 52, 25, 43, 50, 44, 54)

j. Finish labeling the units on the horizontal axis, and plot the histogram. (10 points)
for this data.



k. Finish labeling the units on the horizontal axis, and plot the frequency polygon (14 points)
for this data.



l. Calculate the coefficient of variation for this sample. (4 points)

Scratch Paper

Work on this page will not be graded under any circumstances!

Formulas

$$s^2 = \frac{\Sigma(X - \bar{X})^2}{n-1} = \frac{n(\Sigma X^2) - (\Sigma X)^2}{n(n-1)}$$

$$\mu = \frac{\Sigma X}{N}$$

$$CVar = \frac{\sigma}{\mu} \cdot 100\%$$

$$MR = \frac{\text{highest} + \text{lowest}}{2}$$

$$\bar{X} = \frac{\Sigma X}{n} \quad R = \text{highest} - \text{lowest}$$

$$\sigma^2 = \frac{\Sigma(X - \mu)^2}{N} = \frac{N(\Sigma X^2) - (\Sigma X)^2}{N^2}$$

$$CVar = \frac{s}{\bar{X}} \cdot 100\%$$