Math 153 - Quiz 2

September 6, 2012

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (5 points) The frequency distribution shown below gives the surface temperatures (in degrees Fahrenheit) of Lake Choombomanga over a selected period of time.

Temperature	Frequency
49.2–53.8	2
53.9–58.5	12
58.6–63.2	20
63.3–67.9	36
68.0–72.6	18
72.7–77.3	8

(a) What are the class boundaries associated with the first class listed above?

49.15 AND 53.85

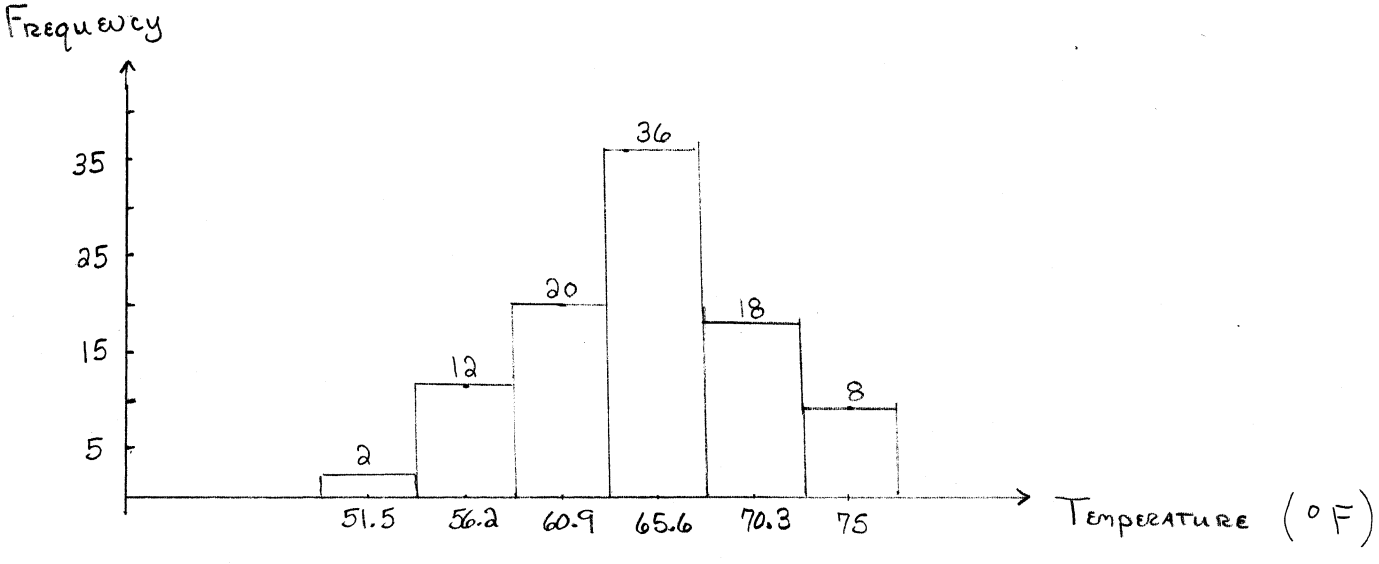
(b) What is the class width?

$53.9 - 49.2 = \boxed{4.7}$

(c) If the frequency distribution was changed to a cumulative frequency distribution, what count would be associated with "Less than 67.9 °F"?

$2 + 12 + 20 + 36 = \boxed{70}$

(d) Using class midpoints along the horizontal axis, construct the corresponding histogram.



2. (1 point) Could a histogram be used to display the areas of the continents? Briefly explain.

No, A BAR GRAPH SHOULD BE USED. AREAS ARE NOT FREQUENCIES, AND CONTINENT NAMES ARE QUALITATIVE NOT QUANTITATIVE.

3. (3 points) Look at the histogram on the attached sheet.

   (a) How many data values are included in the sample represented by the histogram?

$$1+3+4+7+6+3+1 = \boxed{25}$$

   (b) If the histogram was changed to a relative frequency histogram, what would be the height of the second bar?

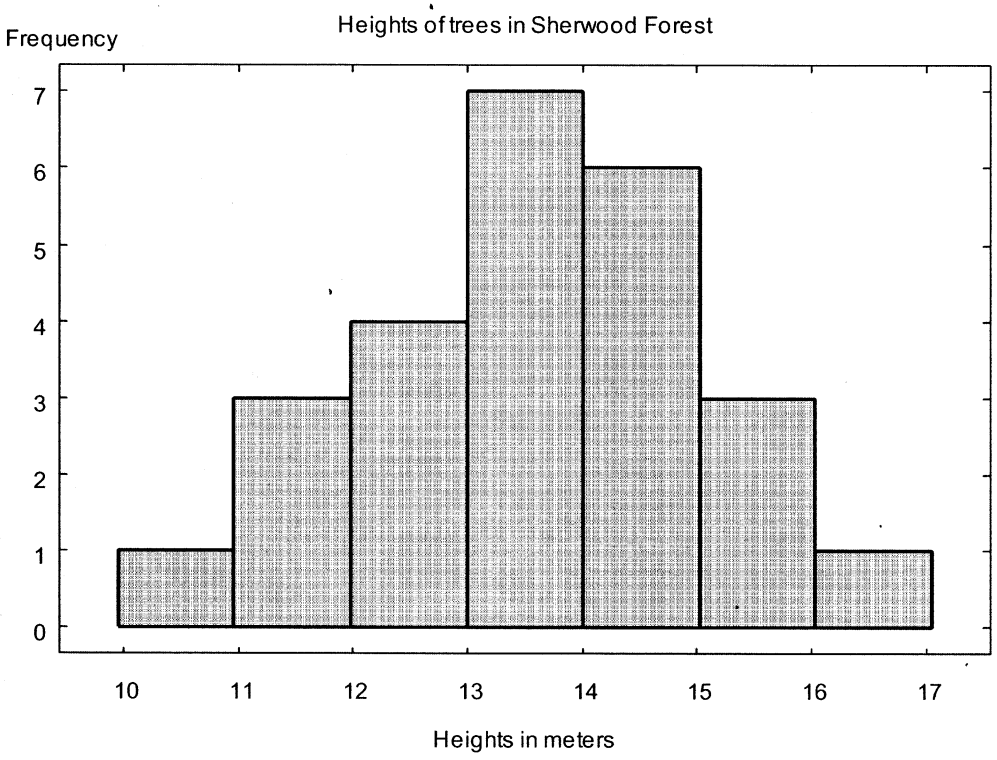
$$\frac{3}{25} = \frac{12}{100} = \boxed{12\%}$$

   (c) Is the distribution approximately normal? Briefly explain.

YES. THE OUTLINE OF THE HISTOGRAM COULD BE ROUGHLY TRACED BY A SYMMETRIC, BELL-SHAPED CURVE.

4. (1 point) What is systematic sampling?

AN ELEMENT OF THE POPULATION IS SELECTED AND AFTER THAT, EVERY K^{TH} ELEMENT IS SELECTED. (K IS SOME WHOLE NUMBER.)


Heights of trees in Sherwood Forest
Frequency
7
6
5
4
3
2
1
0
10
11
12
13
14
15
16
17
Heights in meters