Suffix ish in english

Below is a frequency table of data compiled on a group of college students' heights. Step 1: Construct a cumulative frequency table for this data. Calculating the cumulative frequency is just adding up the frequencies as you go along. The first value is the first frequency value, we then add this to the second value to get the second cumulative frequency value 13 + 33 = 46 Continuing this, we get that 46 + 35 = 81 people were 180 cm of shorter, is 81 + 11 = 92 Step 2: Using the cumulative frequency, plot a cumulative frequency graph. The points plotted on your graph should be plotted at the end of each class, i.e. the point which has cumulative frequency of 13 should be plotted at 160 on the height axis, and so on. You should join up the plotted points with a smooth curve. It should end up looking like an elongated 'S' shape. Using the cumulative frequency graph below, calculate the median and interquartile range. [3 marks] There are 92 people in total, so the lower quartile, median, and upper quartile will be the 23rd person, 46th person, and 69th person respectively. So, we find these points on the y-axis, and then draw a line across to the graph to find the corresponding heights on the x-axis. This is shown on the cumulative frequency graph below. Here, we get Q_1 = 163, \,\, \text{ median } = 170, \,\,Q_3 = 176 The interquartile range is therefore 176-163=13 a) For the cumulative frequency column, we simply need to add up the frequencies as we move downwards in the table: The first cumulative frequency box is simply the number 16. For the second cumulative frequency box, we need to add 24 to the 16 from the previous cumulative frequency box. 24+16=40 For the third cumulative frequency box, we need to add 19 to the 40 from the previous cumulative frequency box. 19+40=59 This process of adding the frequency total to the cumulative frequency total repeats until the table is complete. The final table should look like this: b) For the cumulative frequency diagram, we need to plot the time in minutes along the x-axis and your cumulative frequency totals on the y-axis. Then we need to plot each of the cumulative frequency figures with the corresponding class interval maximums. In other words, for the time interval of 0 - 20 minutes, you would go along the x-axis to 20 minutes (the maximum in this time range) and go upwards to the cumulative frequency value of 16. Once you have plotted all points, including the origin (0,0), join up all points with a smooth curve. (A cumulative frequency graph is always a smooth curve which goes up.) Your graph should look like this: From the graph, we can see that the minimum number of hours was 0 and the maximum was 12. We can also see from the graph that is represents exercising data from 72 people since this is where the graph ends. In order to draw a box plot, we need to know the following values: a) the minimum value b) the maximum value c) the median value d) the lower quartile e) the upper quartile We have already established that the minimum value is 0 and the maximum value is 72. The median value is the middle value. Since there are 72 values in total, then the median value is the 36th value (since 36 is half of 72). If we go up the y-axis and locate the 36th value, go across to the line and then down, we can see that is corresponds to a value of 3.2 hours. The lower quartile is half-way between the first value and the median. To work out which value is the lower quartile, find \frac{1}{4} of the total number of values: 72 \div4 = 18 The lower quartile is therefore the value of the 18th term. If we go up the y-axis and locate the 18th value, go across to the line and then down, we can see that is corresponds to a value of 1.6 hours. The upper quartile is half-way between the final value and the median values. To work out which value is the upper quartile, simply find \frac{3}{4} of the total number of values: \dfrac{3}{4}\times72 = 54 The upper quartile is therefore the value of the 54th term. If we go up the y-axis and locate the 54th value, go across to the line and then down, we can see that is corresponds to a value of 5 hours. The graph below illustrates the above: Using this information, the resulting box plot will look like this: a) We know that there are 8 cars with a value between £0 and £10,000[/latex], so we can insert 8 in the £0 - £10,000 cumulative frequency box. The next box is the £0 - £15,000 box. We know that there are 8 cars with a value of less than £10,000, and a further 12 cars which have a value of more than £10,000 but less than £15,000, therefore 20 cars have a value of between £0 and £15,000, so this is the next value we can insert. Continue this process until all values are calculated and your cumulative frequency table should look as follows: To draw the graph, we need to plot the cumulative frequency totals on the vertical axis (the cumulative frequency is always on the y-axis and the price in pounds on the x-axis. However, since we are dealing with grouped data (the prices are price bands), we need to plot the cumulative frequency total against the highest value in the band. So, the first point we plot (after plotting (0,0), the origin) would be the cumulative frequency total of 8 against £10,000 (the top value in the £0 - £10,000 band). The next point we would plot would be the cumulative frequency value of 20 against £15,000 (the highest value in the £10,000 - £15,000 band). Your completed cumulative frequency graph should look as follows: b) We know that there are 48 cars in the showroom in total (since the maximum value on the cumulative frequency table is 48). To find the median, we need to read the value of the car that corresponds to a cumulative frequency total of 24 (half of 48). By locating the value of 24 on the cumulative frequency axis, we can see that this corresponds to a value of approximately £16,000. c) For this question, we need to locate £17,500 on the x-axis and see what cumulative frequency total this corresponds to. By drawing a line up from £17,500 until it touches the line and then drawing a horizontal line to the y-axis, we should hit a cumulative frequency total of approximately 26. This means that 26 cars have a value that is up to £17,500. Therefore the remaining cars must have a value which is greater than £17,500. Since there are 48 cars in total then the number of cars which have a value of more than £17,500 is simply 48-26=22 cars. a) In order to draw our cumulative frequency graph, we need to work out the cumulative frequency totals: To represent this information on a graph, we need to plot the cumulative frequency totals on the vertical axis against snake length on the horizontal axis. After plotting our first point of (0,0), the next point is (1,23); the key thing to remember is that since the snake length data is grouped, we need to plot the highest value in each length band (so for the 0 metres – 1 metre band, we would plot the corresponding cumulative frequency total against 1 metre). Once we have plotted all the points, we need to join them together with a smooth line, with an end result similar to the below: b) The interquartile range is calculated by subtracting the lower quartile from the upper quartile. In this data set, the lower quartile is the length of the 40th snake (40 because 40 is \frac{1}{4} of 160. To find the length of the 40th snake, find 40 on the vertical cumulative frequency axis and find the corresponding length on the horizonal axis. The length of the 40th snake is approximately 1.5 metres. In this data set, the upper quartile is the length of the 120th snake (120 because 120 is \frac{3}{4} of 160. To find the length of the 120th snake, find 120 on the vertical cumulative frequency axis and find the corresponding length on the horizonal axis. The length of the 120th snake is approximately 3.5 metres. Therefore the interquartile ranges is 2 metres. c) For this question, we need to work out the median snake length at Bob Exotic's Snake Sanctuary. Since there are 160 snakes in total, the median snake length is the length of the 80th snake (80 because 80 is \frac{1}{2} of 160. The 80th snake has a length of approximately 2.6m. If at the other snake sanctuary, the median snake length is 1.78 metres, then to calculate how much smaller as a percentage, we need to find out how much smaller the median snake is: 2.6\text{ m } – 1.78\text{ m} = 0.82\text{ m} To work out a percentage increase or decrease, you need to remember the simply formula: \dfrac{ \text{ difference}}{\text{ original value}}\times 100 \dfrac{0.82\text{ m}}{2.6\text{ m}}\times 100=31.5\% (In this question, however, it may not be obvious what the original value is. The question asks us to work out by what percentage these snakes are smaller than the snakes in Bob Exotic's Snake Sanctuary. Because of the word 'than', it is the length of the snakes at Bob Exotic's Snake Sanctuary that we should consider as the 'original' value. Words / phrases like 'compared to' or 'than' always indicate what we are working out a percentage of.) Once you have a set of data, you will need to organize it so that you can analyze how frequently each datum occurs in the set. However, when calculating the frequency, you may need to round your answers so that they are as precise as possible.A simple way to round off answers is to carry your final answer one more decimal place than was present in the original data. Round off only the final answer. Do not round off any intermediate results, if possible. If it becomes necessary to round off intermediate results, carry them to at least twice as many decimal places as the final answer. For example, the average of the three quiz scores four, six, and nine is 6.3, rounded off to the nearest tenth, because the data are whole numbers. Most answers will be rounded off in this manner.It is not necessary to reduce most fractions in this course. Especially in Probability Topics, the chapter on probability, it is more helpful to leave an answer as an unreduced fraction.The way a set of data is measured is called its level of measurement. Correct statistical procedures depend on a researcher being familiar with levels of measurement. Not every statistical operation can be used with every set of data. Data can be classified into four levels of measurement. They are (from lowest to highest level):Nominal scale level Ordinal scale level Interval scale level Ratio scale levelData that is measured using a nominal scale is qualitative(categorical). Categories, colors, names, labels and favorite foods along with yes or no responses are examples of nominal level data. Nominal scale data are not ordered. For example, trying to classify people according to their favorite food does not make any sense. Putting pizza first and sushi second is not meaningful.Smartphone companies are another example of nominal scale data. The data are the names of the companies that make smartphones, but there is no agreed upon order of these brands, even though people may have personal preferences. Nominal scale data cannot be used in calculations.Data that is measured using an ordinal scale is similar to nominal scale data but there is a big difference. The ordinal scale data can be ordered. An example of ordinal scale data is a list of the top five national parks in the United States. The top five national parks in the United States can be ranked from one to five but we cannot measure differences between the data.Another example of using the ordinal scale is a cruise survey where the responses to questions about the cruise are "excellent," "good," "satisfactory," and "unsatisfactory." These responses are ordered from the most desired response to the least desired. But the differences between two pieces of data cannot be measured. Like the nominal scale data, ordinal scale data cannot be used in calculations.Data that is measured using the interval scale is similar to ordinal level data because it has a definite ordering but there is a difference between data. The differences between interval scale data can be measured though the data does not have a starting point.Temperature scales like Celsius (C) and Fahrenheit (F) are measured by using the interval scale. In both temperature measurements, 40° is equal to 100° minus 60°. Differences make sense. But 0 degrees does not because, in both scales, 0 is not the absolute lowest temperature. Temperatures like -10° F and -15° C exist and are colder than 0.Interval level data can be used in calculations, but one type of comparison cannot be done. 80° C is not four times as hot as 20° C (nor is 80° F four times as hot as 20° F). There is no meaning to the ratio of 80 to 20 (or four to one).Data that is measured using the ratio scale takes care of the ratio problem and gives you the most information. Ratio scale data is like interval scale data, but it has a 0 point and ratios can be calculated. For example, four multiple choice statistics final exam scores are 80, 68, 20 and 92 (out of a possible 100 points). The exams are machine-graded.The data can be put in order from lowest to highest: 20, 68, 80, 92.The differences between the data have meaning. The score 92 is more than the score 68 by 24 points. Ratios can be calculated. The smallest score is 0. So 80 is four times 20. The score of 80 is four times better than the score of 20.Twenty students were asked how many hours they worked per day. Their responses, in hours, are as follows: 5; 6; 3; 3; 2; 4; 7; 5; 2; 3; 5; 6; 5; 4; 4; 3; 5; 2; 5; 3.Table 1.9 lists the different data values in ascending order and their frequencies. DATA VALUE FREQUENCY 2 3 3 5 4 3 5 6 6 2 7 1 Table 1.9 Frequency Table of Student Work Hours A frequency is the number of times a value of the data occurs. According to Table 1.9, there are three students who work two hours, five students who work three hours, and so on. The sum of the values in the frequency column, 20, represents the total number of students included in the sample.A relative frequency is the ratio (fraction or proportion) of the number of times a value of the data occurs in the set of all outcomes to the total number of outcomes. To find the relative frequencies, divide each frequency by the total number of students in the sample–in this case, 20. Relative frequencies can be written as fractions, percents, or decimals. DATA VALUE FREQUENCY RELATIVE FREQUENCY 2 3 3 20 3 20 or 0.15 3 5 5 20 5 20 or 0.25 4 3 3 20 3 20 or 0.15 5 6 6 20 6 20 or 0.30 6 2 2 20 2 20 or 0.10 7 1 1 20 1 20 or 0.05 Table 1.10 Frequency Table of Student Work Hours with Relative Frequencies The sum of the values in the relative frequency column of Table 1.10 is 20 20 20 20 , or 1.Cumulative relative frequency is the accumulation of the previous relative frequencies. To find the cumulative relative frequencies, add all the previous relative frequencies to the relative frequency for the current row, as shown in Table 1.11. DATA VALUE FREQUENCY RELATIVE FREQUENCY CUMULATIVE RELATIVE FREQUENCY 2 3 3 20 3 20 or 0.15 0.15 3 5 5 20 5 20 or 0.25 0.15 + 0.25 = 0.40 4 3 3 20 3 20 or 0.15 0.40 + 0.15 = 0.55 5 6 6 20 6 20 or 0.30 0.55 + 0.30 = 0.85 6 2 2 20 2 20 or 0.10 0.85 + 0.10 = 0.95 7 1 1 20 1 20 or 0.05 0.95 + 0.05 = 1.00 Table 1.11 Frequency Table of Student Work Hours with Relative and Cumulative Relative Frequencies The last entry of the cumulative relative frequency column is one, indicating that one hundred percent of the data has been accumulated. Because of rounding, the relative frequency column may not always sum to one, and the last entry in the cumulative relative frequency column may not be one. However, they each should be close to one.Table 1.12 represents the heights, in inches, of a sample of 100 male semiprofessional soccer players. HEIGHTS (INCHES) FREQUENCY RELATIVE FREQUENCY CUMULATIVE RELATIVE FREQUENCY 59.95–61.95 5 5 100 5 100 = 0.05 0.05 61.95–63.95 3 3 100 3 100 = 0.03 0.05 + 0.03 = 0.08 63.95–65.95 15 15 100 15 100 = 0.15 0.08 + 0.15 = 0.23 65.95–67.95 40 40 100 40 100 = 0.40 0.23 + 0.40 = 0.63 67.95–69.95 17 17 100 17 100 = 0.17 0.63 + 0.17 = 0.80 69.95–71.95 12 12 100 12 100 = 0.12 0.80 + 0.12 = 0.92 71.95–73.95 7 7 100 7 100 = 0.07 0.92 + 0.07 = 0.99 73.95–75.95 1 1 100 1 100 = 0.01 0.99 + 0.01 = 1.00 Total = 100 Total = 1.00 Table 1.12 Frequency Table of Soccer Player Height The data in this table have been grouped into the following intervals:59.95 to 61.95 inches 61.95 to 63.95 inches 63.95 to 65.95 inches 65.95 to 67.95 inches 67.95 to 69.95 inches 69.95 to 71.95 inches 71.95 to 73.95 inches 73.95 to 75.95 inches This example is used again in Descriptive Statistics, where the method used to compute the intervals will be explained.In this sample, there are five players whose heights fall within the interval 59.95–61.95 inches, three players whose heights fall within the interval 61.95–63.95 inches, 15 players whose heights fall within the interval 63.95–65.95 inches, 40 players whose heights fall within the interval 65.95–67.95 inches, 17 players whose heights fall within the interval 67.95–69.95 inches, 12 players whose heights fall within the interval 69.95–71.95, seven players whose heights fall within the interval 71.95–73.95, and one player whose heights fall within the interval 73.95–75.95. All heights fall between the endpoints of an interval and not at the endpoints. From Table 1.12, find the percentage of heights that are less than 65.95 inches. If you look at the first, second, and third rows, the heights are all less than 65.95 inches. There are 5 + 3 + 15 = 23 players whose heights are less than 65.95 inches. The percentage of heights less than 65.95 inches is then 23 100 23 100 or 23%. This percentage is the cumulative relative frequency entry in the third row. Table 1.13 shows the amount, in inches, of annual rainfall in a sample of towns. Rainfall (Inches) Frequency Relative Frequency Cumulative Relative Frequency 2.95–4.976 6 50 6 50 = 0.12 0.12 4.97–6.997 7 50 7 50 = 0.14 0.12 + 0.14 = 0.26 6.99–9.0115 15 50 15 50 = 0.30 0.26 + 0.30 = 0.56 9.01–11.038 8 50 8 50 = 0.16 0.56 + 0.16 = 0.72 11.03–13.059 9 50 9 50 = 0.18 0.72 + 0.18 = 0.90 13.05–15.075 5 50 5 50 = 0.100.90 + 0.10 = 1.00 Total = 50Total = 1.00 From Table 1.13, find the percentage of rainfall that is less than 9.01 inches. From Table 1.12, find the percentage of heights that fall between 61.95 and 65.95 inches. Add the relative frequencies in the second and third rows: 0.03 + 0.15 = 0.18 or 18%. From Table 1.13, find the percentage of rainfall that is between 6.99 and 13.05 inches. Use the heights of the 100 male semiprofessional soccer players in Table 1.12. Fill in the blanks and check your answers. The percentage of heights that are from 67.95 to 71.95 inches is: ____. The percentage of heights that are from 67.95 to 73.95 inches is: ____. The percentage of heights that are more than 65.95 inches is: ____. The number of players in the sample who are between 61.95 and 71.95 inches tall is: ____. What kind of data are the heights? Describe how you could gather this data (the heights) so that the data are characteristic of all male semiprofessional soccer players. Remember, you count frequencies. To find the relative frequency, divide the frequency by the total number of data values. To find the cumulative relative frequency, add all of the previous relative frequencies to the relative frequency for the current row. 29% 36% 77% 87 quantitative continuous get rosters from each team and choose a simple random sample from each From Table 1.13, find the number of towns that have rainfall between 2.95 and 9.01 inches. In your class, have someone conduct a survey of the number of siblings (brothers and sisters) each student has. Create a frequency table. Add to it a relative frequency column and a cumulative relative frequency column. Answer the following questions:What percentage of the students in your class have no siblings? What percentage of the students have from one to three siblings? What percentage of the students have fewer than three siblings?Nineteen people were asked how many miles, to the nearest mile, they commute to work each day. The data are as follows: 2; 5; 7; 3; 2; 10; 18; 15; 20; 7; 10; 18; 5; 12; 13; 12; 4; 5; 10. Table 1.14 was produced: DATA FREQUENCY RELATIVE FREQUENCY CUMULATIVE RELATIVE FREQUENCY 3 3 3 19 3 19 0.1579 4 1 1 19 1 19 0.2105 5 3 3 19 3 19 0.1579 7 2 2 19 2 19 0.2632 10 3 4 19 4 19 0.4737 12 2 2 19 2 19 0.7895 13 1 1 19 1 19 0.8421 15 1 1 19 1 19 0.8948 18 1 1 19 1 19 0.9474 20 1 1 19 1 19 1.0000 Table 1.14 Frequency of Commuting Distances Is the table correct? If it is not correct, what is wrong? True or False: Three percent of the people surveyed commute three miles. If the statement is not correct, what should it be? If the table is incorrect, make the corrections. What fraction of the people surveyed commute five or seven miles? What fraction of the people surveyed commute 12 miles or more? Less than 12 miles? Between five and 13 miles (not including five and 13 miles)? No. The frequency column sums to 18, not 19. Not all cumulative relative frequencies are correct. False. The frequency for three miles should be one; for two miles (left out), two. The cumulative relative frequency column should read: 0.1052, 0.1579, 0.2105, 0.3684, 0.4737, 0.6316, 0.7368, 0.7895, 0.8421, 0.9474, 1.0000. 519519 719719, 12191219, 719719 Table 1.13 represents the amount, in inches, of annual rainfall in a sample of towns. What fraction of towns surveyed get between 11.03 and 13.05 inches of rainfall each year? Table 1.15 contains the total number of deaths worldwide as a result of earthquakes for the period from 2000 to 2012. Year Total Number of Deaths 2000 231 2001 21,357 2002 11,685 2003 33,819 2004 228,802 2005 88,003 2006 6,605 2007 712 2008 88,011 2009 1,790 2010 320,120 2011 21,953 2012 768 Total 823,856 Answer the following questions. What is the frequency of deaths measured from 2006 through 2009? What percentage of deaths occurred after 2009? What is the relative frequency of deaths that occurred in 2003 or earlier? What is the percentage of deaths that occurred in 2004? What kind of data are the numbers of deaths? The Richter scale is used to quantify the energy produced by an earthquake. Examples of Richter scale numbers are 2.3, 4.0, 6.1, and 7.0. What kind of data are these numbers? 97,118 (11.8%) 41.6% 67,092/823,356 or 0.081 or 8.1 % 27.8% Quantitative discrete Quantitative continuous Table 1.16 contains the total number of fatal motor vehicle traffic crashes in the United States for the period from 1994 to 2011. Year Total Number of Crashes Year Total Number of Crashes 199436,254 200438,444 1995 37,241 2005 39,252 1996 37,494 2006 38,648 1997 37,324 2007 37,435 1998 37,107 2008 34,172 1999 37,140 2009 30,862 2000 37,526 2010 30,296 2001 37,862 2011 29,757 2002 38,491 Total 653,782 2003 38,477 Answer the following questions. What is the frequency of deaths measured from 2000 through 2004? What percentage of deaths occurred after 2006? What is the relative frequency of deaths that occurred in 2000 or before? What is the percentage of deaths that occurred in 2011? What is the cumulative relative frequency for 2006? Explain what this number tells you about the data.

words in english with suffix ish. what does the suffix ish mean. is ish a suffix