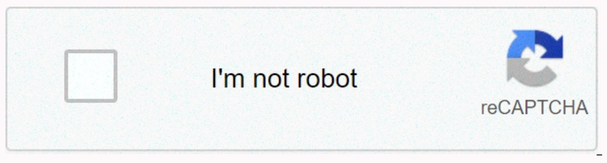

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Parallel box plot worksheet

Here's an example of a box plot for data collected on people's shoe sizes. You should be able to interpret the box plot as well as build it from the given data. First, we are going through what all the bits mean. Range - The size of the shoes is 1.5 and the biggest is 13, from this we can calculate the range. \text{Range } = \text{largest value } - \text{ flashed value } = 13 - 1.5 = 11.5 Range is one way to measure data dissemination, for more head information here (Min Median Mode and Range revision). The interquartile range (or IQR) is another measure of data dissemination. To do this, we need quartils. To find the interquartile range we minus the lower quartile (Q_1) from the upper quartile (Q_3). So, reading from the plot of the box we got: \text{Interquartile range } = Q_3 - Q_1 = 10 - 4 = 6 Interquartile range is a good measure of spread because it is not affected by any outliers - data points that sit far from all the rest. Note: Finding an IQR is a very common question so learn how to do it; it is a measure of the spread option. Median: - Median (Q_2) is always shown on the box plot by the middle line. Here, it is 8 Build a box plot for the following data set. 3, 5, 8, 8, 9, 11, 12, 12, 13, 13, 16 [3 marks] Given that the lower quartiles are tribesway through and the upper quartiles are 3-quarters way through, we get: Low Quartile = \dfrac{n + 1}{4}th term & Upper Quartile = \dfrac{3(n + 1}This data set contains 1, so we got 1 number, {4} so we got 1st Median is the term \dfrac{11 + 1}{2} = 6\text{th} term, so \text{median } = 11. The lower quartile is the term \dfrac{11 + 1}{4} = 3\text{rd}, Q_1 = 8. The upper quartil is the term \dfrac{3(11+1)}{4} = 9\text{th} terminology, Q_3 = 13. Now we have all the information we need to pull the box plot. Remember where everything went from the picture above, and the results looked like this: The following box plots show how many hours TV was watched by 11 classes (orange) and 9-year-old (gray) classes in a given month. Compare the box plot. [2 marks] When comparing a box plot you want to see the median and interquartile ranges as your first two comparisons. The median time is bigger for 9 classes. The 9-year class also has a larger interquartile range. For the range, we need to push the value shrugged off the biggest. From the graph, we can see that the smallest value is 10 and the biggest is 15.8, so: \text{Range } = 15.8 - 10 = 5.8\text{ second}. For the interquartile range, we need to push the lower quartiles from the upper quartils. From the graph, we can see that the lower quartiles are 10.5 and the upper quartils are 12.4, so: julat } = 12.4 - 10.5 = 1.9\text{ when}. Although we have a lot of information, we still lost some key value to pull the complete box plot. Complete. We lost the upper quartile and the lowest score. Julat is the narrowest value extracted from the largest value, so if we reject the julat of the largest value we will be able to work the smallest value: \text{Smallest value } = 92 - 21 = 71 Julat interquartile is the lower kuartile centered from the upper quartile, so if we add the interquartile julat to the lower quartile, we will be able to work: \text{Upper quartile } = 73 + 11 = 84 We now have all the information we need for the plot box. Your ready box plot should be similar to the one below: To build a box plot, we need the smallest value, the largest value, the median, and the lower and upper quartile. We have the highest value (220) and the largest value (400), so we need to work on the value tray. The median is %dfrac{7+1}{2} = 4th hyphen, i.312. The lower quartile is {dfrac{7+1}{4} = 2nd ampartile, i.i. 252. The upper quartile is {dfrac{3(7+1)}{4} = 6th ample, i.e. 332. Now we have all the details necessary to pull the plot of the box, which should be the same as this: Comparing the two plots of the box, we can see that the second has a higher median, which means that the 30-year-olds on average are more slowly balas than 20-year-olds. In addition, we can see that the interquartile julat is greater for children aged 30 years than it is for children aged 20 years (since they are on the same scale, seeing one above the other, we can see this without thinking about it), which means that the response time for children aged 30 years is more spread than others for children aged 20 years. To pull our box plot, we need the following values: The lowest weight The highest weight Median weight The lower quartile weight The lowest weight top quartile weight has been given as 61 kilograms and the highest weight is 135 kilograms, so this weight will be at the end of the plot box. We know that there are 100 values in total, so the median is 50th. On cumulative frequency graphs, we need to look for 50 on the cumulative frequency pack and look for a weight commensurate in kilograms. The 50th value weighs 92 kilograms, so the line in the middle of the box in the box plot will fall at 92. Since there are 100 values in total, the lower quartile is the 25th value. In the cumulative frequency graph, we need to look for 25 on the cumulative frequency pack and look for a weight commensurate in kilograms. The 25th value weighs 84 kilograms. In the graph, we need to look for 75 on the cumulative frequency pack and look for a weight commensurate in kilograms. The 75th value weighs 101 kilograms. As a result, the plot of the box that is ready should be with the one below: a) To pull our box plot, we need the following values for each bank: Lowest salary Highest salary Lower quartile salary Salary Salary Upper quarry salary To find the lowest wage, we need to find what's 0 on the cumulative frequency axis corresponding to. For Welsh Bank and for the Bank of Finland, it is £21,000. To find the highest salary, we need to find what is 100 on the cumulative frequency axis corresponding to. For Welsh Bank and for the Bank of Finland, it is £80,000. We know that there are 100 values in total, so the median is the 50th value (because 50 is half of 100). On the cumulative frequency graph, we need to find 50 on the cumulative frequency axis and find the corresponding salary. The 50th value for Welsh Bank corresponds to a salary of £52,000, and the 50th value for the Bank of Finland corresponds to a salary of £62,000. Since there are 100 values in total, the lower quartile is the 25th value (since 25 is \frac{1}{4} than 100. On the cumulative frequency graph, we need to find 25 on the cumulative frequency axis and find the corresponding salary. The 25th value for Welsh Bank corresponds to a salary of £44,000, and the 25th value for the Bank of Finland corresponds to a salary of £50,000. Since there are 100 values in total, the upper quartilis are the 75th value (since 75 is \frac{3}{4} than 100. On the cumulative frequency graph, we need to find 75 on the cumulative frequency axis and find the corresponding salary. The 75th value for Welsh Bank corresponds to a salary of £61,000, and the 75th value for the Bank of Finland corresponds to a salary of £68,000. As a result, the finished box plot should be similar to both below: b) By comparing two box plots, we can see that: the median salary is higher at the Bank of Finland (£62,000 compared to £52,000). Therefore, people earn more average at the Bank of Finland than at Welsh Bank. salaries at Welsh Bank and bank of Finland are equally consistent (since the interquartile range, £18,000, is the same for both. Try a review card on this topic. These Graph Worksheets will produce data sets, where students have to create box plots and whiskers. 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