Grade 6 Men's Shoe Sizes – Anchor Annotations

**A1 Score 4**

Part A: The student provided the correct answer (*10.5*) with a correct and complete explanation *(the line inside the box represents where the median is)*. [2 points]

Part B: The student provided the correct answer *(10 men)* with a correct and complete explanation *(The whiskers both represent* $\frac{1}{4}$ *of the data. The number of men represented by the whisker from 6 to 9 is 10 men. The whisker from 11*$\frac{1}{2}$ *– 13 is 10 men…each part show* $\frac{1}{4}$ *of 40 and* $\frac{1}{4}$ *of 40 is 10).* [2 points]

**A2 Score 4**

Part A: The student provided the correct answer $\left(10\frac{1}{2}\right)$ with a correct and complete explanation *(the line inside the box shows the median).* [2 points]

Part B: The student provided a correct answer *(ten men)* with a correct and complete explanation (*40 ÷ 4 = 10 since there were 40 men and there were 4 intervals).* Additionally, the student explained why the whisker from 6 to 9 shows a bigger range of shoe sizes and the whisker from 11 $\frac{1}{2}$ to 13 shows a smaller range of shoe sizes. [2 points]

**A3 Score 3**

Part A: The student provided the correct answer $\left(10\frac{1}{2}\right)$ with an incorrect explanation *(Halfway through the second quartile is* $\left.10\frac{1}{2}\right)$ that does not explain that the median in a box-and-whisker plot is the line inside the box. [1 point]

Part B: The student provided the correct answer *(10 men)* with a correct and complete explanation (*between 6* - *9 is 25% and between 11*$\frac{1}{2}$ *and 13 is also 25%. 40 × .25*). [2 points]

**A4 Score 3**

Part A: The student provided the correct answer (*10.5*)with a correct and complete explanation (*I* *know that the middle line shows the median)*. [2 points]

Part B: The student did not provide the number of men with shoe sizes in each interval. However, the student’s explanation is correct and complete (*each part of the whisker plot is equal to 25% so, even though 6 to 9 is longer than the whisker from 11* $\frac{1}{2}$ *to 13, they are both equal to* 25%). [1 point]

**A5 Score 2**

Part A: The student provided the correct answer $\left(10\frac{1}{2}\right)$with a correct and complete explanation (*the line was in the middle of the box)*. [2 points]

Part B: The student did not provide the number of men with shoe sizes in each interval. The student’s explanation is incorrect (*the box means the most common shoe sizes so the line has to be shorter from 11* $\frac{1}{2}$ *to 13 because the box is there*) as this does not explain that each quartile is 25% of the total number of men. [0 points]

**A6 Score 2**

Part A: The student provided the correct answer $\left(10\frac{1}{2}\right)$with a correct and complete explanation (*I* *determined the median by finding the line that was in between the upper quartile of* $11\frac{1}{2}$ *, and the lower quartile of nine. The line that separates those two is the median)*. [2 points]

Part B: The student does not provide an answer for number of men with shoe sizes in each interval. The student’s explanation is incorrect (*the range of 6-9 still is less than the median so that must mean that* $11\frac{1}{2}$ *to 13 has more men wearing those shoes*) as this does not explain that each quartile is 25% of the total number of men. [0 points]

**A7 Score 2**

Part A: The student provided the correct answer of (*10.5*) with a correct but incomplete explanation *(The line that shows the middle is right in between the 10 and the 11)*.This explanation does not indicate the location is the line inside the box. [1.5 points]

Part B: The student provided an incorrect answer (*10 shoe sizes*)with a correct but incomplete explanation (*each quanity is* 25%, *it does not matter how long the line is. It will always be 25%*). The inclusion of *40 + 4 = 10* in the explanation shows some misunderstanding. [0.5 point]

**A8 Score 1**

Part A: The student provided the correct answer $\left(10\frac{1}{2}\right)$ with an incomplete explanation *(There's a line and I brought it straight down to* $\left.10\frac{1}{2}\right)$. This explanation does not indicate the location is the line inside the box. [1.5 points]

Part B: The student does not provide an answer for number of men with shoe sizes in each interval with an incorrect explanation that does not explain that each quartile is 25% of the total number of men. [0 points]

**A9 Score 1**

Part A: The student provided the correct answer (*10 and* $\left.\frac{1}{2}\right)$with an incorrect explanation (*I* *found this by minimizing the numbers until it came to the middle*) that does not explain that the median in a box-and-whisker plot is the line inside the box. [1 point]

Part B: The student does not provide an answer for number of men with shoe sizes in each interval with an incorrect explanation that does not explain that each quartile is 25% of the total number of men. [0 points]

# A10 Score 1

Part A: The student provided the correct answer (*10.5*) with an incorrect explanation (*I* *gathered my numbers from where each line was pointing to. I found the middle number*)that does not explain that the median in a box-and-whisker plot is the line inside the box. [1 point]

Part B: The student provided an incorrect answer that shows a misunderstanding of intervals (*The number of men with shoe sizes in each interval is 5*) with an incorrect explanation (*I took the number of men he tested, 40, and ÷ by how many numbers their was on the box-and­whisker plot, 8*) that does not explain that each quartile is 25% of the total number of men. [0 points]

# A11 Score 0

Part A: The student provided the incorrect answer (*9.5*) with an incorrect explanation (*I crossed them out*) that does not explain that the median in a box-and-whisker plot is the line inside the box.The student crossed out the numbers on the number line to try to show that 9.5 was in the middle, which shows no understanding of how to read a box-and-whisker plot. [0 points]

Part B: The student does not provide an answer for number of men with shoe sizes in each interval with an incorrect explanation that does not explain that each quartile is 25% of the total number of men. There is insufficient evidence that the student understands how to correctly interpret a box-and-whisker plot. [0 points]

# A12 Score 0

Part A: The student provided an incorrect answer (*9*) with an incorrect explanation (*I found out the median by first, writing all the chosen numbers by least to greatest. Then I found out the middle number was* 9) that does not explain that the median in a box-and-whisker plot is the line inside the box. The student is referring to a method of finding a median by using a list of numbers, starting at each end, then coming to the middle. This does not show understanding of how to locate the median on a box-and-whisker plot. [0 points]

Part B: The student does not provide an answer for number of men with shoe sizes in each interval with an incorrect explanation that does not explain that each quartile is 25% of the total number of men. There is insufficient evidence that the student understands how to correctly interpret a box-and-whisker plot. [0 points]