The Apple team in math class was given the following challenge problem:

**Place the following numbers on a number line:**

 **{-3, 6,** $-4\frac{2}{3}$ **,** $-4\frac{1}{2}$ **, 0,** $2\frac{2}{3}$**,** $2\frac{1}{2}$ **, -2.6, 1, 5, -2, 3, 2, -4, -5}**

The students’ answers are shown below. For each student in the group, determine if their answer is correct or incorrect. If it is correct, explain what they did that made their response completely correct. If it is incorrect, describe what part(s) they did correctly, as well as what they did wrong (tell what they were thinking and explain why it is incorrect.) If all three students are incorrect, show the correct answer and explain how you know it is correct.

1. Alex’s answer:



1. Bobby’s answer:



1. Chris’s answer:

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**Scoring Rubric:**

3pts:

Score 0.5 for each answer (a, b, and c) for identifying response properly as correct or incorrect.

Score 0.5 for each explanation of why each response (a, b, and c) is either correct or incorrect.

1 pt:

Score 0.5 for correctly identifying (or writing) the correct answer.

Score 0.5 for correctly describing steps or explaining reasons for the proper answer.

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Correct response** | points available | points earned |
| Alex’s answer | **incorrect** | 0.5 |   |
| Alex’s explanation | Closest to correct because the numbers were in the proper order. Incorrect because the spacing was not consistent | 0.5 |   |
| Bobby’s answer | **incorrect** | 0.5 |   |
| Bobby’s explanation | Bobby listed all of the negatives first, but in reverse order. He needs to remember that the negatves start at zero with the absolute value getting larger as you move to the left. Bobby's spacing is also incorrect (like Alex's) | 0.5 |   |
| Chris’s answer | **incorrect** | 0.5 |   |
| Chris’s explanation | Chris's spacing was correct, however, his negative mixed numbers were incorrectly placed. -4 1/2 should be between -4 and -5. | 0.5 |   |
| Student’s answer | Student should show the numbers in the same order as Alex, but with appropriate spacing (like Chris) | 0.5 |   |
| Student’s explanation | Student should acknowledge both the ***order*** and the ***spacing*** of the numbers on the number line. | 0.5 |   |
|   | **Total Score** |   |

**General Comments**

* **Neatness:** Please be careful, as your handwriting made it difficult to tell what you meant.
* **Neatness:** Excellent job. I could easily tell everything that you were trying to say.
* **Spacing:** Make sure that you space your numbers appropriately when graphing or making a number line. One “space” should represent the same size everywhere throughout your graph.
* **Order:** Some of your numbers were out of order. Please take the time to compare numbers more carefully.
* **Order:** Great job. All of the numbers in your answer were in correct order.
* **Positives and negatives:** Please take the time to double-check the signs of your numbers: Positives are greater than (to the right) of zero and negatives are less than (to the left) of zero.
* **Fraction:** spacing/common denominators: You may find it easier to place numbers on a number line correctly after finding equivalent fractions with common denominators.
* **Decimals and fractions:** When working a problem like this, you may find it helpful to convert either decimals to fractions or fractions to decimals.
* **Reading Directions:** Be sure to read and follow the **directions** more carefully. When you have finished the question, it may be helpful to go back to double-check to be sure that you followed all parts of all directions. It may help to underline or highlight key words in the directions.
* **Reading Questions:** Be sure to read the **question** more carefully. When you have finished the question, it may be helpful to go back to double-check to be sure that you have answered all parts of the question. It may help to underline or highlight key words in the question.
* **Your work really shows how you were thinking mathematically.**
* **Other:**