Name: **Grade:**   **Score:**

Worksheet #3

APPLICATION – LINES, LINE SEGMENTS, AND RAYS

Learning goal: Students will distinguish between lines, line segments, and rays, identify their properties (endpoints, length, direction), and apply using mathematical vocabulary.

A science fair is being held at Anaya's school. Her project involves designing a laser light show where beams start from fixed points and shoot in different directions. Her friend Karan is designing a city map with roads, walls, and signposts. Together, they explore the real-life use of lines, line segments, and rays.

1. Zara draws a line starting from point A and passing through point B, continuing endlessly in both directions. What is this called?

2. Ayaan draws a line that starts at point C and ends at point D. What type of line is this.

3. If a ray starts at point E and passes through point F, how many endpoints does it have and name it?

4. Ayaan says he can measure the length of a line using a ruler. Is he correct?

5. Zara measures the length of a chalk mark between point G and H as 12 cm. What kind of geometric object is this?

6. Ayaan says that a ray can be extended from its starting point. Is he correct? Why or why not.

7. If Zara draws a line segment 15 cm long and divides it into 3 equal parts, what is the length of each part?

8. Ayaan draws 2 rays from the same point forming a 60° angle. What is the point called where the rays meet?

9. Zara claims that every line segment is part of a line. Is she correct?

10. Ayaan draws a ray starting at point M and going through point N. How can he show this using notation?

Name: _____ **Grade:** _____ **Score:** _____

Worksheet #3(Answers)

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A science fair is being held at Anaya's school. Her project involves designing a laser light show where beams start from fixed points and shoot in different directions. Her friend Karan is designing a city map with roads, walls, and signposts. Together, they explore the real-life use of lines, line segments, and rays.

1. Zara draws a line starting from point A and passing through point B, continuing endlessly in both directions. What is this called? **A Line**

2. Ayaan draws a line that starts at point C and ends at point D. What type of line is this.

A line segment.

3. If a ray starts at point E and passes through point F, how many endpoints does it have and name it?

One endpoint (at point E).

4. Ayaan says he can measure the length of a line using a ruler. Is he correct?

No, a line has no end, so its length cannot be measured.

5. Zara measures the length of a chalk mark between point G and H as 12 cm. What kind of geometric object is this? **A line segment.**

6. Ayaan says that a ray can be extended from its starting point. Is he correct? Why or why not.

No, a ray starts from one point and extends endlessly in one direction only.

7. If Zara draws a line segment 15 cm long and divides it into 3 equal parts, what is the length of each part? $\frac{15}{3} = 5$ **5cm**

8. Ayaan draws 2 rays from the same point forming a 60° angle. What is the point called where the rays meet? **The endpoint or vertex.**

9. Zara claims that every line segment is part of a line. Is she correct?

Yes, a line segment is a part of a line between two endpoints.

10. Ayaan draws a ray starting at point M and going through point N. How can he show this using notation? **As, $\overrightarrow{MN}$**