

Number Line Detectives

Sort points by the equal spaces on each number line.

3.7 "Geometry and measurement. The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement..."

NAME _____

DATE _____

HALVES, FOURTHS, OR EIGHTHS

This point is on a number line split into 2, 4, or 8 equal parts from 0 to 1. It shows a half, fourth, or eighth.

A point is at $\frac{7}{8}$.



OTHER EQUAL PARTS

This point is on a number line split into a different number of equal parts. It does not show halves, fourths, or eighths.

A point is at $\frac{2}{3}$.



1 SORT

8 items

Circle MATCHES or DIFFERENT for each figure, then choose two figures and write how the number of equal spaces helped you decide.

1.

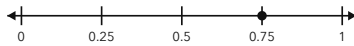


Figure 1

MATCHES

DIFFERENT

2.

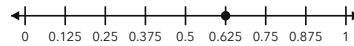


Figure 2

MATCHES

DIFFERENT

3.

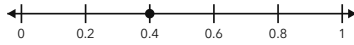


Figure 3

MATCHES

DIFFERENT

4.

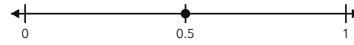


Figure 4

MATCHES

DIFFERENT

5.

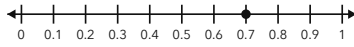


Figure 5

MATCHES

DIFFERENT

6.

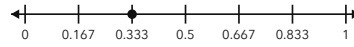


Figure 6

MATCHES

DIFFERENT

7.

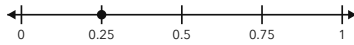


Figure 7

MATCHES

DIFFERENT

8.

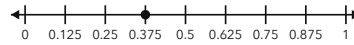


Figure 8

MATCHES

DIFFERENT

2

PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # HOW I KNEW

ITEM # HOW I KNEW

3

MAKE YOUR OWN

One of each

Write one new number-line example for MATCHES and one new number-line example for DIFFERENT.

MATCHES

DIFFERENT

CHALLENGE

Draw a number line from 0 to 1 split into 8 equal parts, then place and label points at $\frac{2}{8}$ and $\frac{6}{8}$.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (numberline)	MATCHES	The line has 4 equal parts, and the point is $\frac{3}{4}$ of the distance from zero.
2	Figure 2 (numberline)	MATCHES	The line has 8 equal parts, and the point is $\frac{5}{8}$ of the distance from zero.
3	Figure 3 (numberline)	DIFFERENT	The line has 5 equal parts, so the point shows fifths.
4	Figure 4 (numberline)	MATCHES	The line has 2 equal parts, and the point is $\frac{1}{2}$ of the distance from zero.
5	Figure 5 (numberline)	DIFFERENT	The line has 10 equal parts, so the point shows tenths.
6	Figure 6 (numberline)	DIFFERENT	The line has 6 equal parts, so the point shows sixths.
7	Figure 7 (numberline)	MATCHES	The line has 4 equal parts, and the point is $\frac{1}{4}$ of the distance from zero.
8	Figure 8 (numberline)	MATCHES	The line has 8 equal parts, and the point is $\frac{3}{8}$ of the distance from zero.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **MATCHES:** A number line split into 8 equal parts with a point at $\frac{4}{8}$.
- **DIFFERENT:** A number line split into 9 equal parts with a point at $\frac{4}{9}$.

Challenge: A 0-to-1 number line divided into 8 equal spaces, with points labeled $\frac{2}{8}$ and $\frac{6}{8}$.

MATCHES: 1, 2, 4, 7, 8. DIFFERENT: 3, 5, 6. For explanations, look for the student's use of the number of equal spaces from 0 to 1.