Reasoning and Problem Solving
Step 7: Number Line to 10,000

National Curriculum Objectives:

Mathematics Year 4: (4N4a) Identify, represent and estimate numbers using different representations

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Find the end of a number line when given the start and clues. Intervals represent either 100, 500 or 1,000. Up to 2 possible answers.
Expected Find the end of a number line when given the start and clues. Intervals represent multiples of 10. Up to 5 possible answers.
Greater Depth Find the end of a number line when given the start and clues. Intervals represent multiples of 5. Up to 5 possible answers.

Questions 2, 5 and 8 (Reasoning)
Developing Explain who is correct when describing a number on a number line, starting with a multiple of 1,000. Some increments given (including start and end points).
Expected Explain who is correct when describing a number on an unlabelled number line, starting with a multiple of 100. Start and end points given.
Greater Depth Explain who is correct when describing a number on an unlabelled number line, starting with a multiple of 50. Start and end points given.

Questions 3, 6 and 9 (Reasoning)
Developing Explain who has the largest number represented on a number line with some increments given (including start and end points). Intervals in multiples of 100.
Expected Explain who has the largest number represented on a number line with start and end points given. Intervals in multiples of 10.
Greater Depth Explain who has the largest number represented on a number line with non-uniform intervals labelled. Intervals in multiples of 5.

More Year 4 Place Value resources.

Did you like this resource? Don't forget to review it on our website.

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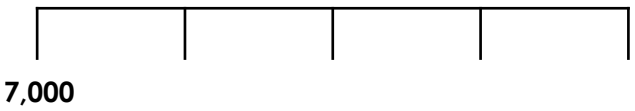
Number Line to 10,000

1a. Maggie has drawn this number line but has forgotten to include the end point.

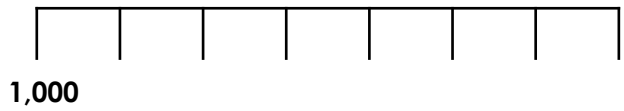


She knows that each interval represents either 100, 500 or 1,000. She also knows that 8,000 fits on the line but 10,000 does not.

What was the end point of the number line?

D PS

1b. Bo has drawn this number line but has forgotten to include the end point.

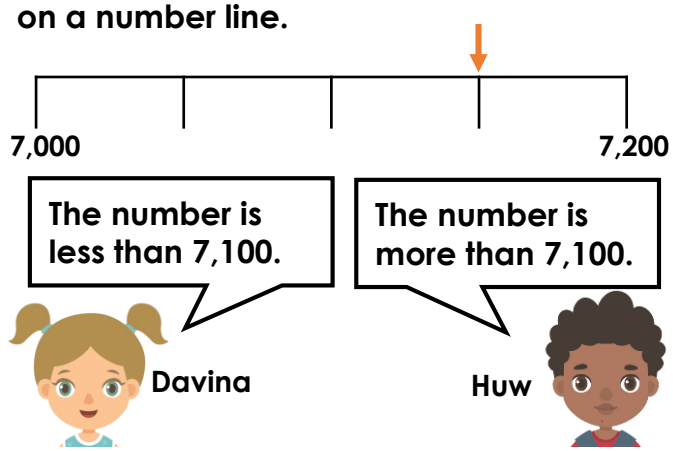


He knows that the each interval represents either 100 or 1,000. He also knows that 1,500 fits on the line but 4,000 does not.

What was the end point of the number line?

D PS

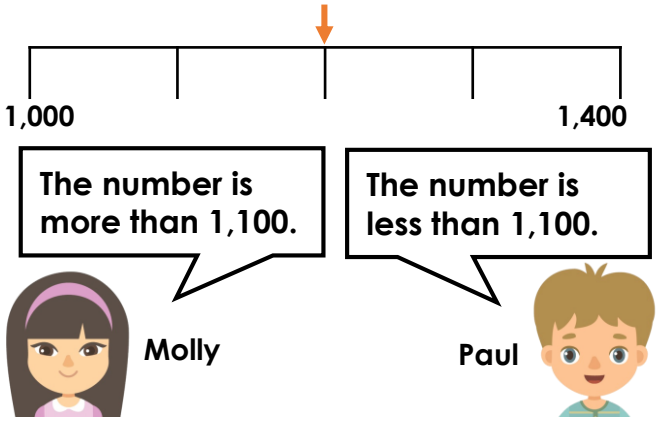
2a. Some friends are describing a number on a number line.



Who is correct? Explain your reasoning.

D R

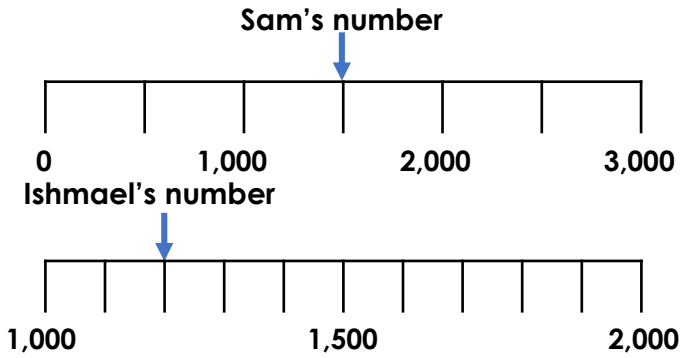
2b. Some friends are describing a number on a number line.



Who is correct? Explain your reasoning.

D R

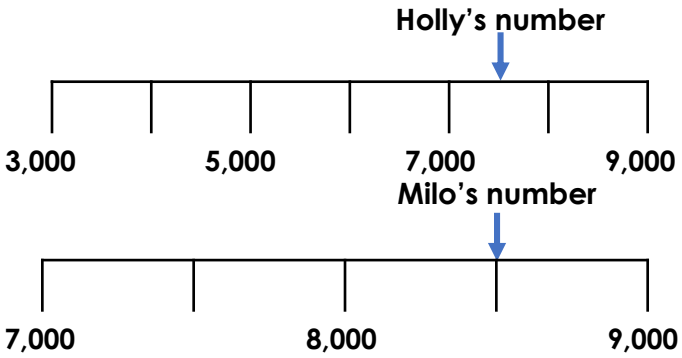
3a. Sam and Ishmael have placed their numbers on these number lines.



Who has the largest number? Convince me.

D R

3b. Holly and Milo have placed their numbers on these number lines.



Who has the largest number? Convince me.

D R

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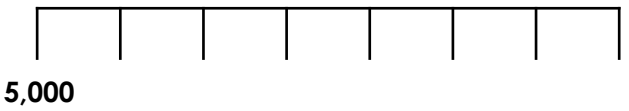
Number Line to 10,000

4a. Sarah has drawn this number line but has forgotten to include the end point.



5,000

She knows that each interval represents a multiple of 10. She also knows that 5,270 fits on the line but 5,430 does not.

What could the end point of the number line be?

E

PS

5a. Some friends are describing a number on a number line.

2,400 2,600

The number is more than 2,450.

Sue

The number is more than 2,500.

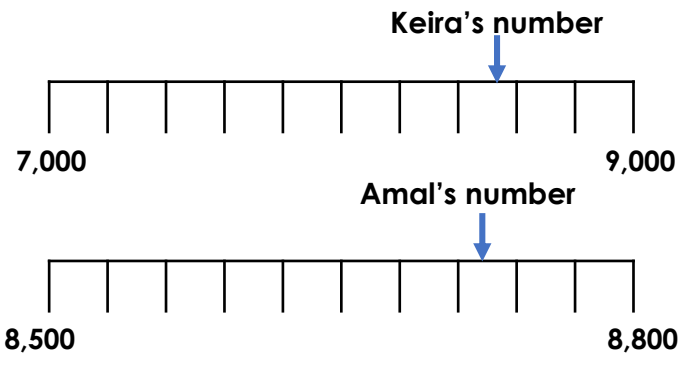
Mikey

Who is correct? Explain your reasoning.

E

R

6a. Keira and Amal have placed their numbers on these number lines.



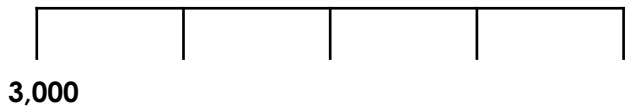
Who has the largest number? Convince me.

E

R

Number Line to 10,000

4b. Matthew has drawn this number line but has forgotten to include the end point.



3,000

He knows that each interval represents a multiple of 10. He also knows that 3,050 fit on the line but 3,250 did not.

What could the end point of the number line be?

E

PS

5b. Some friends are describing a number on a number line.

3,200 3,600

The number is less than 3,400.

Eli

The number is more than 3,500.

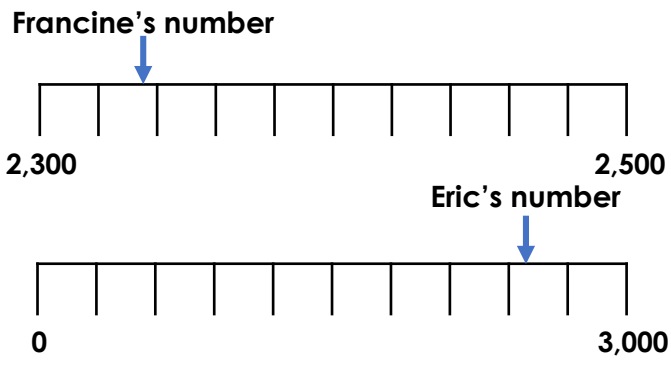
Rick

Who is correct? Explain your reasoning.

E

R

6b. Francine and Eric have placed their numbers on these number lines.



Who has the largest number? Convince me.

E

R

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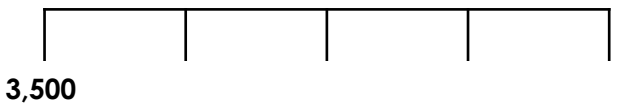
Number Line to 10,000

Number Line to 10,000

7a. Shariqa has drawn this number line but has forgotten to include the end point.

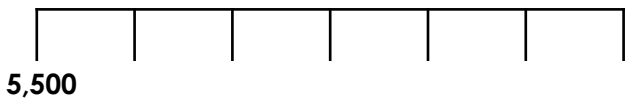


She knows that each intervals represents a multiple of 5. She also knows that 3,620 fit on the line but 3,690 does not.

What could the end point of the number line be?

GD PS

7b. Julian has drawn this number line but has forgotten to include the end point.

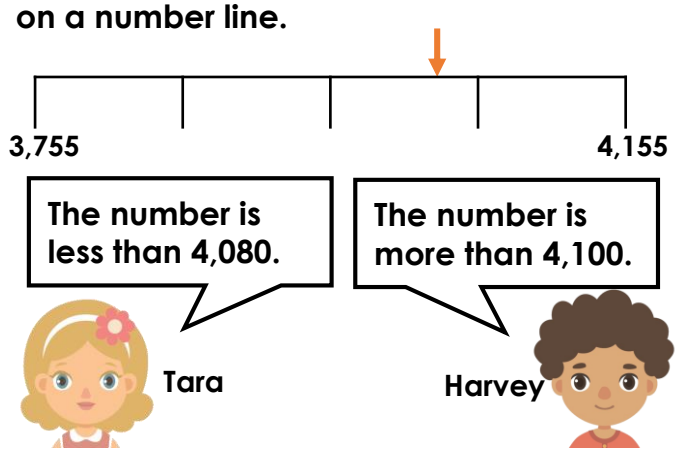


He knows that each intervals represents a multiple of 5. He also knows that 5,580 fit on the line but 5,690 does not fit on the line.

What could the end point of the number line be?

GD PS

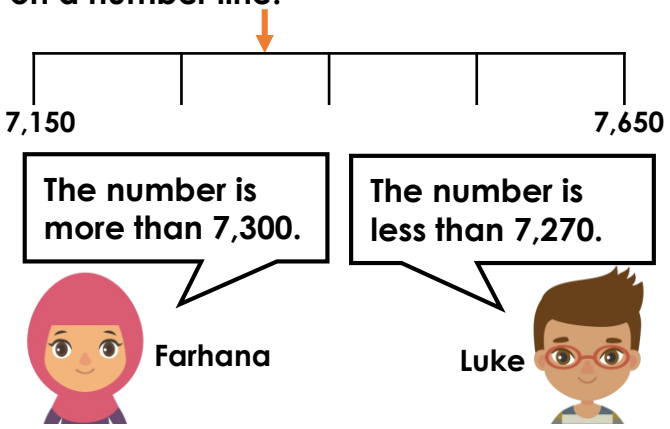
8a. Some friends are describing a number on a number line.



Who is correct? Explain your reasoning.

GD R

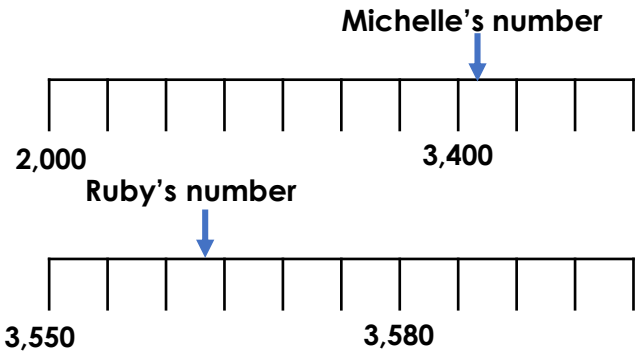
8b. Some friends are describing a number on a number line.



Who is correct? Explain your reasoning.

GD R

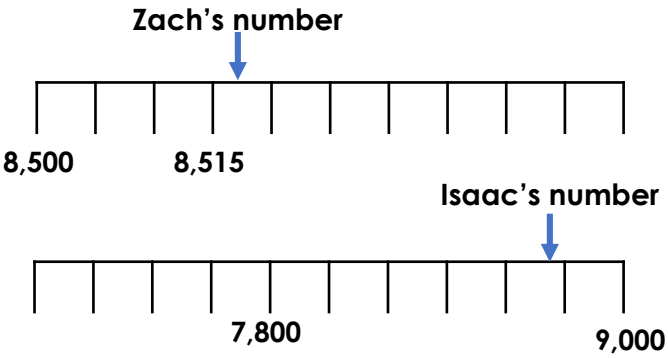
9a. Michelle and Ruby have placed their numbers on these number lines.



Who has the largest number? Convince me.

GD R

9b. Zach and Isaac have placed their numbers on these number lines.



Who has the largest number? Convince me.

GD R

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Reasoning and Problem Solving
Number Line to 10,000

Developing

1a. 9,000 (intervals of 500)

2a. Huw is correct. If you find the midpoint of 7,100, you can see that the number is above 7,100.

3a. Sam's number is 1,500. Ishmael's number is 1,200. Therefore, Sam's number is larger.

Expected

4a. Various answers, for example: 5,280 (intervals of 40); 5,350 (intervals of 50); 5,420 (intervals of 60).

5a. Sue is correct. If you divide the number line into 4 parts, you can see that the number is between 2,450 and 2,500. It is closer to 2,450 and therefore is less than 2,475.

6a. Keira's number is between 8,400 and 8,600. Amal's number is between 8,710 and 8,740. Therefore, Amal's number is larger.

Greater Depth

7a. Various answers, for example: 3,620 (intervals of 30); 3,640 (intervals of 35); 3,660 (intervals of 40); 3,680 (intervals of 45).

8a. Tara is correct. The number line is divided into 4 parts, which means the number is between 3,955 and 4,055.

9a. Michelle's number is between 3,400 and 3,500. Ruby's number is between 3,560 and 5,665. Therefore, Ruby's number is larger.

Reasoning and Problem Solving
Number Line to 10,000

Developing

1b. 1,700 (intervals of 100)

2b. Molly is correct. The arrow is pointing to the midpoint, which is 1,200 and so is therefore more than 1,100.

3b. Holly's number is between 7,000 and 8,000. Milo's number is 8,500. Therefore, Milo's number is larger.

Expected

4b. Various answers, for example: 3,080 (intervals of 20); 3,120 (intervals of 30); 3,160 (intervals of 40); 3,200 (intervals of 50); 3,240 (intervals of 60).

5b. Rick is correct. If you divide the number line into 4 parts, you can see that the number is between 3,500 and 3,600.

6b. Francine's number is between 2,320 and 2,340. Eric's number is between 2,400 and 2,700. Therefore, Eric's number is larger.

Greater Depth

7b. Various answers, for example: 5,590 (intervals of 15); 5,620 (intervals of 20); 5,650 (intervals of 25); 5,680 (intervals of 30).

8b. Farhana is correct. The number line is divided into 4 parts, which means the number is between 7,275 and 7,400.

9b. Zach's number is between 8,515 and 8,520. Isaac's number is between 8,700 and 8,800. Therefore, Isaac's number is larger.

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