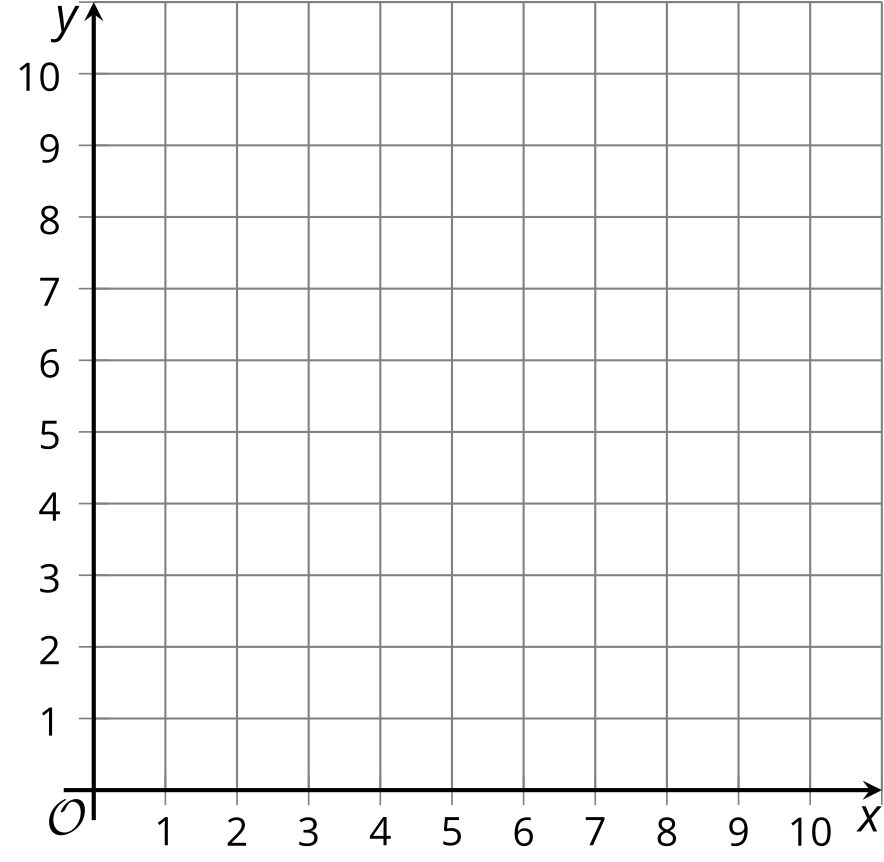
## Unit 6 Lesson 15: Weighted Averages

### 1 Part Way: Points (Warm up)

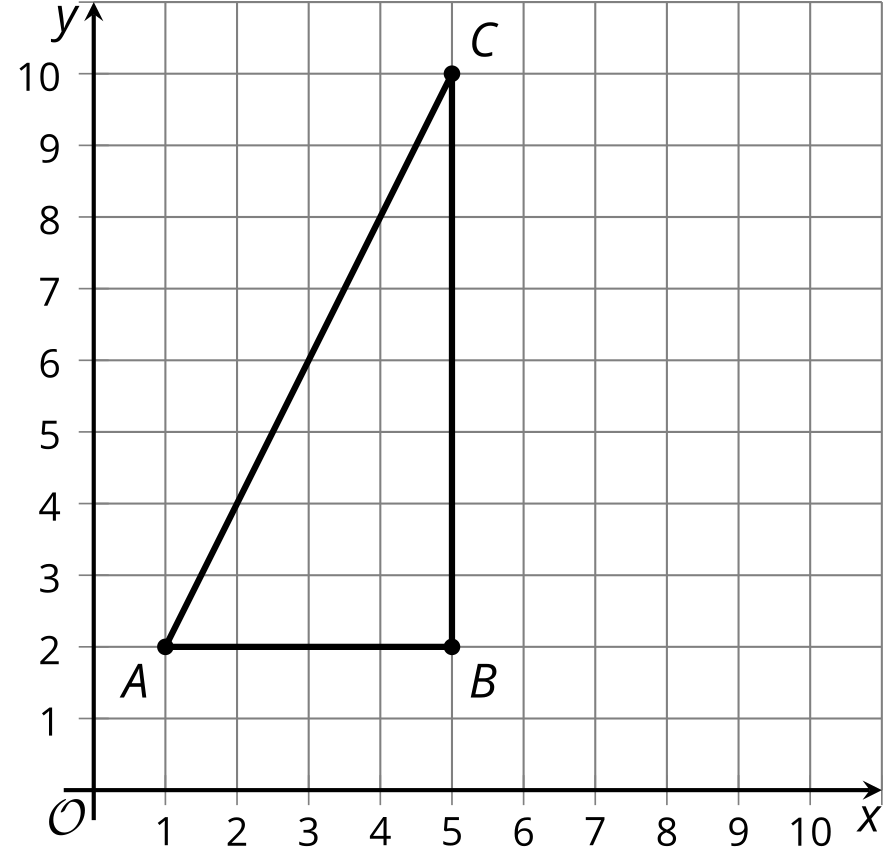
#### Student Task Statement

For the questions in this activity, use the coordinate grid if it is helpful to you.



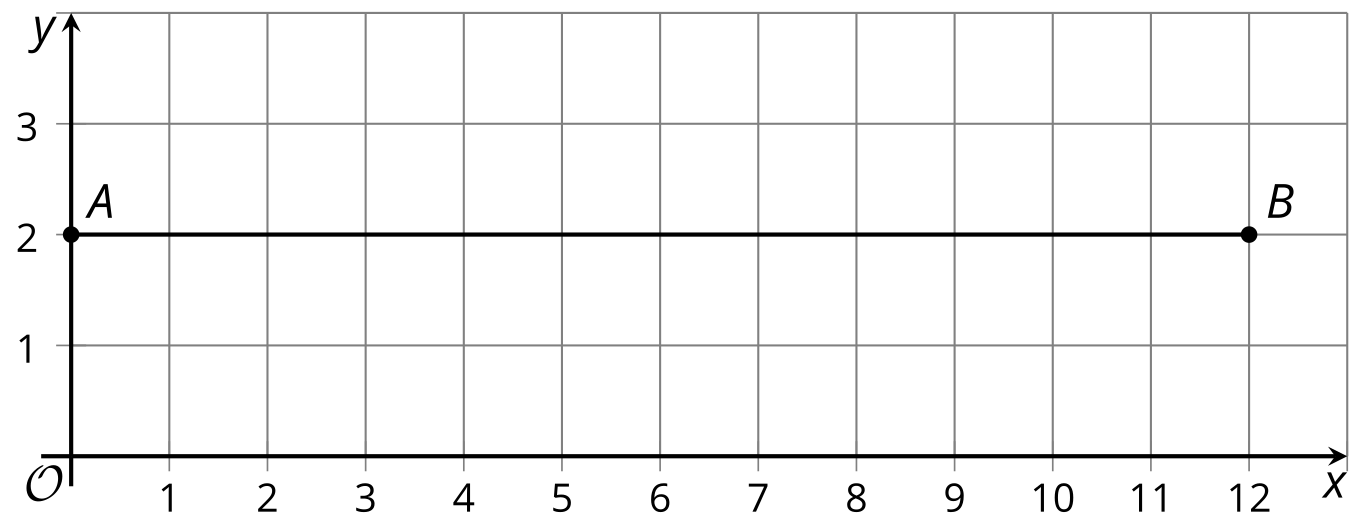
1. What is the midpoint of the segment connecting and ?
2. What is the midpoint of the segment connecting and ?
3. What is the midpoint of the segment connecting and ?

#### Activity Synthesis



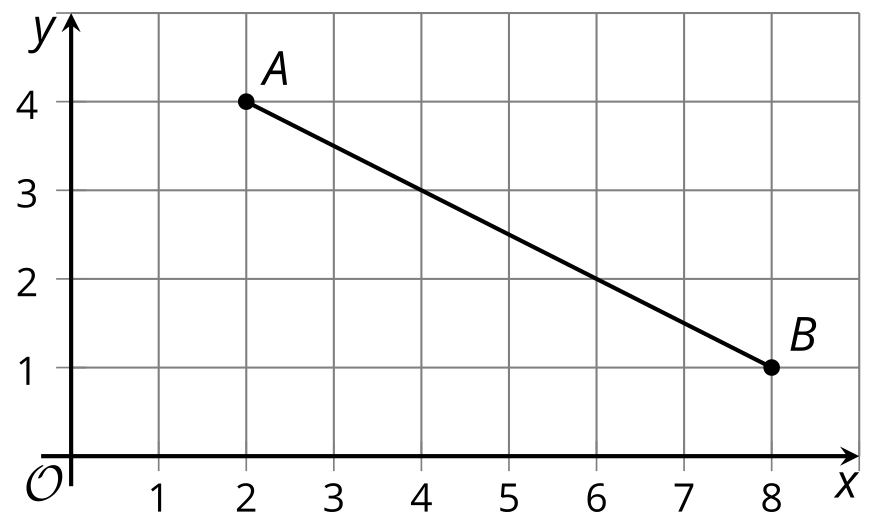
### 2 Part Way: Segment

#### Images for Launch



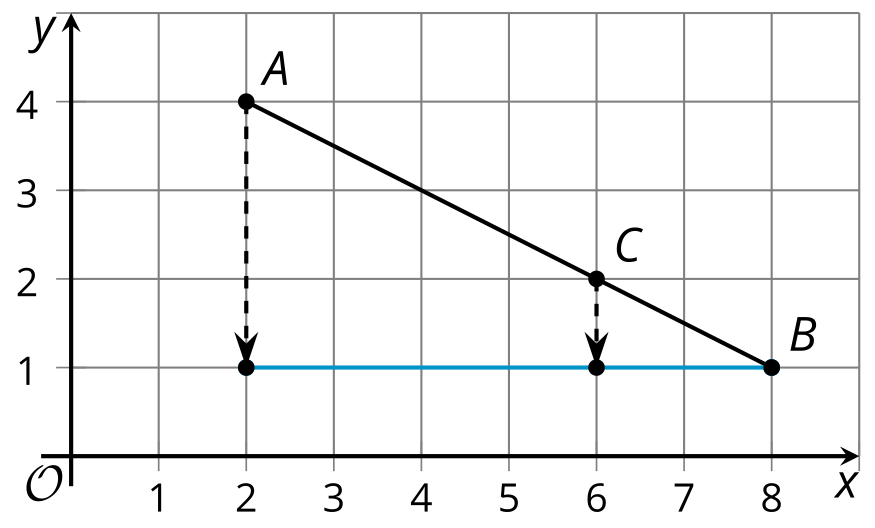
#### Student Task Statement

Point has coordinates . Point has coordinates .



1. Find the point that partitions segment in a ratio.
2. Calculate .
3. What do you notice about your answers to the first 2 questions?
4. For 2 new points and , write an expression for the point that partitions segment in a ratio.

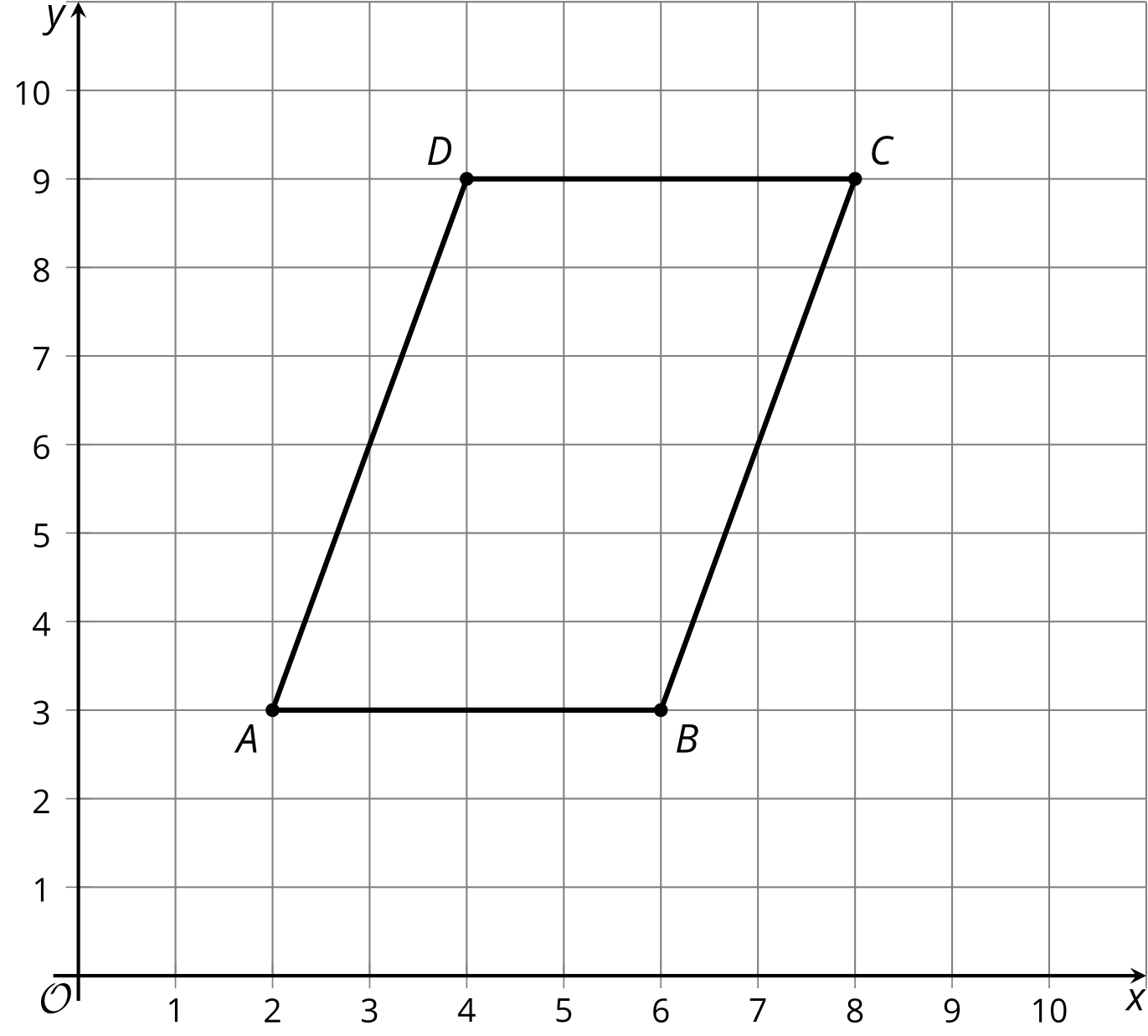
#### Activity Synthesis



### 3 Part Way: Quadrilateral

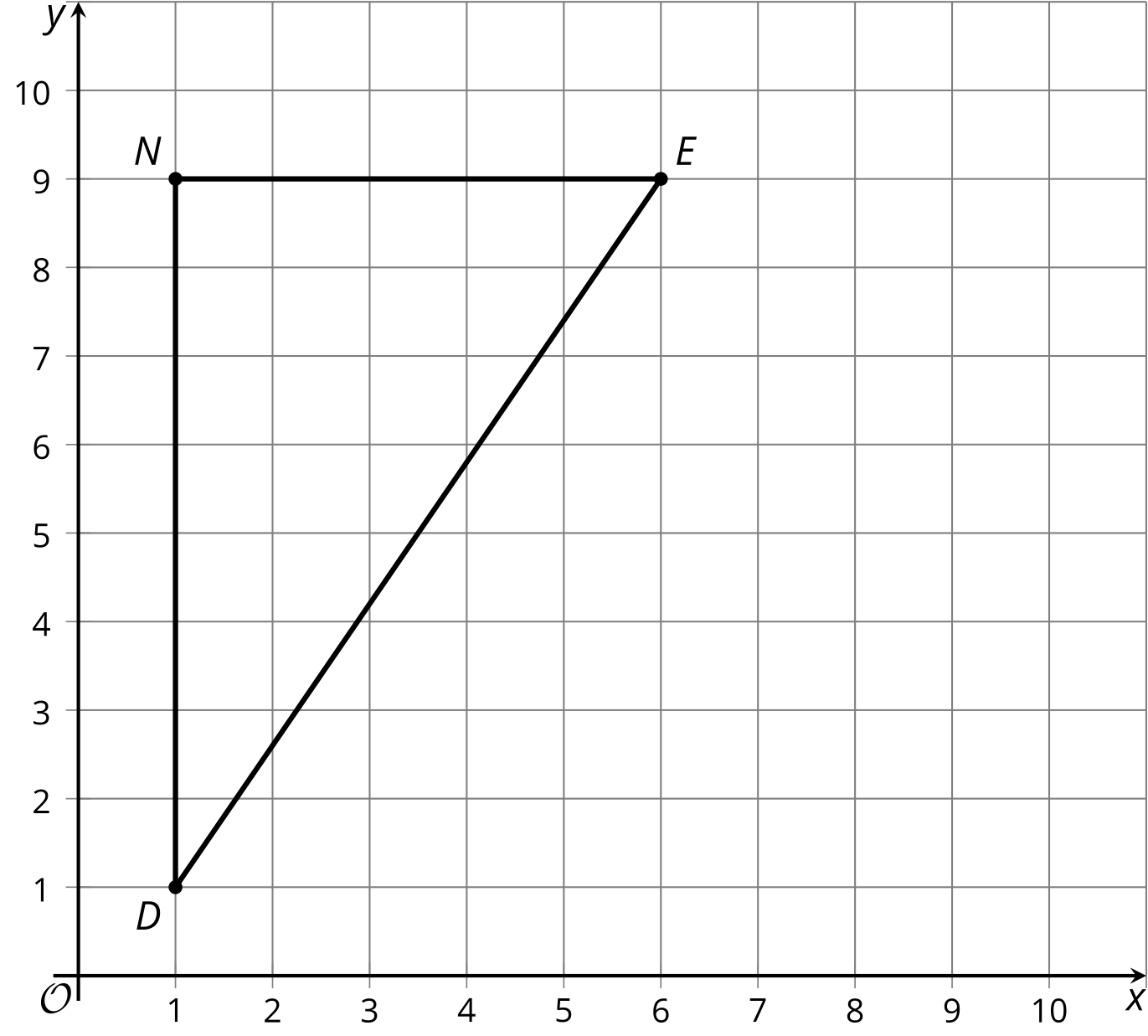
#### Student Task Statement

Here is quadrilateral .



1. Find the point that partitions segment in a ratio. Label it .
2. Find the point that partitions segment in a ratio. Label it .
3. Find the point that partitions segment in a ratio. Label it .
4. Is a dilation of ? Justify your answer.

#### Images for Activity Synthesis





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