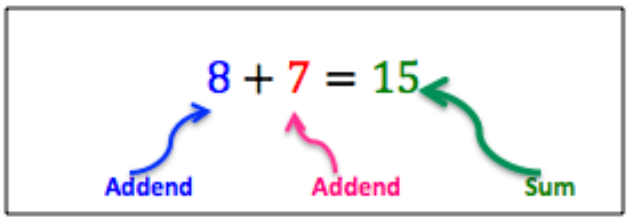
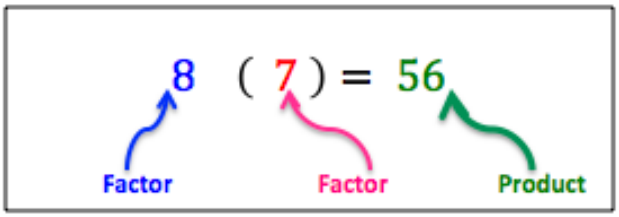
Writing Expressions with Geometric Shapes





Use the precise mathematical language from the diagrams above in your descriptions.

1. Describe how you would find the length of this segment from point A to point C if you know the length of the segment from point A to point B and the length of the segment from point B to point C.

2. Write a numerical expression to find the length from point A to point C if the length of the segment from point A to point B is $4\ cm$ and the length of the segment from point B to point C is $6\ cm$.

   Describe your expression in words.

3. Write an algebraic expression to find the length from point A to point C if the length of the segment from point A to point B is $10\ cm$ and the length of the segment from point B to point C is x.

   Describe your expression in words.

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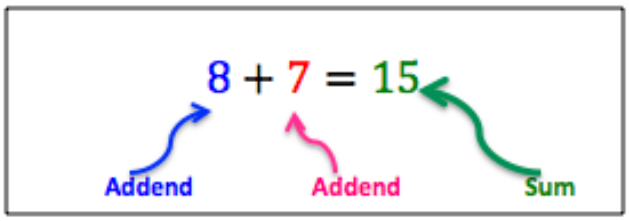
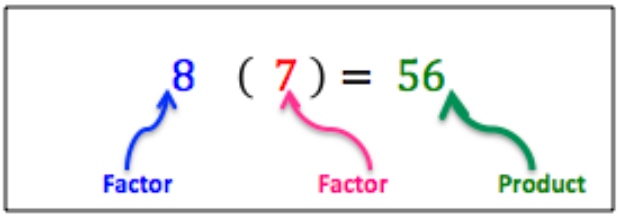
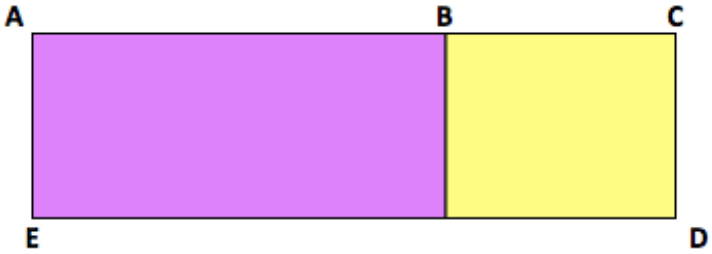




Use the precise mathematical language from the diagrams above in your descriptions.



4. Given the rectangle, describe how you would find the area of the rectangle formed by points $A, C, D, and\ E$.

5. Write a numerical expression to find the area of the rectangle formed by points $A, C, D, and\ E$ if the length of the segment from point A to point B is $4\ cm$ and the length of the segment from point B to point C is $6\ cm$ and the length of the segment from point C to point D is $4.5\ cm$.

   Describe your expression in words.

6. Write an algebraic expression to find the area of the rectangle formed by points $A, C, D, and\ E$ if the length of the segment from point A to point B is $10\ cm$ and the length of the segment from point B to point C is x and the length of the segment from point C to point D is $3\ cm$.

   Describe your expression in words.

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Answer Key:

1. You would find the length of the segment by adding the length of $\overline{AB}$ and the length of $\overline{BC}$.
2. The length is $4 + 6$. The length is the sum of the addends four and six.
3. The length is $10 + x$. The length is the sum of the addends ten and x.
4. You would find the area of the rectangle by multiplying the length of segment $\overline{AB}$ *and* $\overline{BC}$ times the length of segment $\overline{CD}$ *or* $\overline{AE}$.
   Other students might add the two rectangles together instead of multiplying.
5. The area is $(4 + 6)4.5$. The area is the product of two factors. One factor is the sum of four and six and other factor is four and five tenths.
   If students add the two rectangles together instead, they will find the product of two factors and then add the two products to find their sum. 4 ● 4.5 + 6 ● 4.5
6. The area is $(10 + x)3$. The area is the product of two factors. One factor is the sum of seven and x and the other factor of three.
   If they add the two rectangles together they would have (3 ● 10) + 3 x