



Problem 1 – Similar Triangles

In the Cabri™ Jr. file *FIG1*, you are given $\triangle ABC$ that is similar to $\triangle XYZ$. You are also given the perimeters of $\triangle ABC$ and $\triangle XYZ$.

1. Move point *A* to four different positions and collect the data in the table below. Calculate the ratios of the perimeter of $\triangle XYZ$ to the perimeter of $\triangle ABC$ for each position. Record the calculation in the table below. Round your answer for each ratio to the nearest hundredth.

Position	<i>AB</i>	<i>XY</i>	Perimeter of <i>XYZ</i>	Perimeter of <i>ABC</i>	Ratio of Perimeters
1					
2					
3					
4					

2. What is the similarity ratio of the two triangles written in the form *a:b*?
3. What is the ratio of the perimeters of the two triangles in the form *a:b*?
4. How are the similarity ratio and the ratio of the perimeters related?

In *FIG2*, you are given $\triangle ABC$ that is similar to $\triangle XYZ$. You are also given the areas of $\triangle ABC$ and $\triangle XYZ$.

5. Move point *A* to four different positions and collect the data in the table below. Calculate the ratios of the area of $\triangle XYZ$ to the area of $\triangle ABC$ for each position. Record the calculation in the table below. Round your answer for each ratio to the nearest hundredth.

Position	<i>AB</i>	<i>XY</i>	Area of <i>XYZ</i>	Area of <i>ABC</i>	Ratio of Areas
1					
2					
3					
4					



6. What is the ratio of the areas of the two triangles in the form $a:b$?

7. How are the similarity ratio and the ratio of the areas related?

Problem 2 – Similar Figures

In *FIG3*, you are given quadrilateral $ABCD$ that is similar to quadrilateral $XYZT$. You are also given the perimeters of $ABCD$ and $XYZT$.

8. Move point A to four different positions and collect the data in the table below. Calculate the ratios of the perimeter of quadrilateral $XYZT$ to the perimeter of quadrilateral $ABCD$ for each position. Record the calculation in the table below. Round your answer for each ratio to the nearest hundredth.

Position	AB	XY	Perimeter of $XYZT$	Perimeter of $ABCD$	Ratio of Perimeters
1					
2					
3					
4					

9. What is the similarity ratio of the two quadrilaterals written in the form $a:b$?

10. What is the ratio of the perimeters of the two quadrilaterals in the form $a:b$?

11. How are the similarity ratio and the ratio of the perimeters related?



Ratios of Similar Figures

Student Activity

Name _____

Class _____

In *FIG4*, you are given quadrilateral *ABCD* that is similar to quadrilateral *XYZT*. You are also given the areas of *ABCD* and *XYZT*.

12. Move point *A* to four different positions and collect the data in the table below. Calculate the ratios of the area of quadrilateral *XYZT* to the area of quadrilateral *ABCD* for each position. Record the calculation in the table below. Round your answer for each ratio to the nearest hundredth.

Position	<i>AB</i>	<i>XY</i>	Area of <i>XYZT</i>	Area of <i>ABCD</i>	Ratio of Areas
1					
2					
3					
4					

13. What is the ratio of the areas of the two triangles in the form $a:b$?

14. How are the similarity ratio and the ratio of the areas related?

15. If the similarity ratio of two similar figures is $a:b$, then the ratio of the perimeters is what?

16. If the similarity ratio of two similar figures is $a:b$, then the ratio of the areas is _____.