Problem Set

Lesson Summary

Converse of the Fundamental Theorem of Similarity:

*If lines* $PQ$ *and* $P'Q'$ *are parallel, and* $\left|P'Q'\right|=r\left|PQ\right|,$ *then from a center* $O$*,* $P'=Dilation(P)$*,* $Q'=Dilation(Q)$*,* $\left|OP'\right|=r\left|OP\right|,$ *and* $\left|OQ'\right|=r\left|OQ\right|$*.*

To find the coordinates of a dilated point, we must use what we know about FTS, dilation, and scale factor.

1. Dilate point $A,$ located at $(3, 4)$ from center $O,$ by a scale factor $r=\frac{5}{3}$.

What is the precise location of point $A'$?

1. Dilate point $A,$ located at $(9, 7)$ from center $O,$ by a scale factor $r=\frac{4}{9}$. Then dilate point $B,$ located at $(9, 5)$ from center $O$, by a scale factor of $r=\frac{4}{9}$. What are the coordinates of $A'$ and $B'$? Explain.
2. Explain how you used the Fundamental Theorem of Similarity in Problems 1 and 2.