LESSON 8.7

NAME _____ DATE _____

Technology Activity Keystrokes

For use with page 514

TI-92

Construct

1. Draw a pentagon and label it *ABCDE*.

F3 4 (Place cursor at location for point *A*.) ENTER *A* (Move cursor to location for point *B*.) ENTER *B* (Move cursor to location for point *C*.) ENTER *C* (Move cursor to location for point *D*.) ENTER *D* (Move cursor to location for point *E*.) ENTER *E* (Move cursor back to point *A* to close pentagon.) ENTER

2. Draw a point outside the polygon and label it *P*.

F2 1 (Place cursor at desired location for point *P*.) ENTER *P*

3. Set a scale factor to 0.5.

F7 6 ENTER 0.5

Dilate the polygon using a scale factor of 0.5 and center *P*.

F5 3 (Place cursor on polygon.) ENTER (Move cursor to point *P*.) ENTER (Move cursor to scale factor.) ENTER

Label the image $A'B'C'D'E'$.

F7 4 (Place cursor on location of point A'.) ENTER *A* 2nd + 3 7

F7 4 (Place cursor on location of point B'.) ENTER *B* 2nd + 3 7

F7 4 (Place cursor on location of point C'.) ENTER *C* 2nd + 3 7

F7 4 (Place cursor on location of point D'.) ENTER *D* 2nd + 3 7

F7 4 (Place cursor on location of point E'.) ENTER *E* 2nd + 3 7

Investigate

1. Measure $\overline{AP}$ and $\overline{A'P}$.

F6 1 (Place cursor on point *A*.) ENTER (Move cursor to point *P*.) ENTER

F6 1 (Place cursor on point A') ENTER (Move cursor to point *P*.) ENTER

Calculate the ratio $\frac{AP}{A'P}$.

F6 6 (Use cursor to highlight the length of $\overline{AP}$.) ENTER ÷ (Move cursor to highlight the length of $\overline{A'P}$.) ENTER ENTER

2. Measure $\overline{AB}$ and $\overline{A'B'}$.

F6 1 (Place cursor on point *A*.) ENTER (Move cursor to point *B*.) ENTER

F6 1 (Place cursor on point A'.) ENTER (Move cursor to point B'.) ENTER

Calculate the ratio $\frac{AB}{A'B'}$.

F6 6 (Use cursor to highlight the length of $\overline{AB}$.) ENTER ÷ (Move cursor to highlight the length of $\overline{A'B'}$.) ENTER ENTER

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3. Drag point P outside polygon $ABCDE$.

   F1 1 (Place cursor on point P.) ENTER (Use the drag key  and the cursor pad to drag the point.)

4. Drag point P inside polygon $ABCDE$. (See Step 3.)

5. Measure the areas of $ABCDE$ and $A'B'C'D'E'$.

   F6 2 (Place cursor on polygon $ABCDE$.) ENTER (Place cursor on polygon $A'B'C'D'E'$.) ENTER

   Calculate the ratio of the area of polygon $ABCDE$ to the area of polygon $A'B'C'D'E'$.

   F6 6 (Use cursor to highlight the area of polygon $ABCDE$.) ENTER ÷ (Use cursor to highlight the area of polygon $A'B'C'D'E'$.) ENTER ENTER

SKETCHPAD

Construct

1. Draw pentagon $ABCDE$. Select segment from the straightedge tools.
2. Draw point P outside the polygon using the point tool.
3. Dilate the polygon using a scale factor of 0.5 and center P. Using the selection arrow tool, select P and choose **Mark Center** from the **Transform** menu. Select the segments and points of the polygon by holding down the shift key and selecting them. Choose **Dilate** from the **Transform** menu, enter 0.5, and click OK.

Investigate

1. Measure $\overline{AP}$ and $\overline{A'P}$. Using the selection arrow tool, select the endpoints of $\overline{AP}$, and choose **Distance** from the **Measure** menu. Repeat this process for $\overline{A'P}$. To calculate the ratio $\frac{AP}{A'P}$, choose **Calculate** from the **Measure** menu. Then click the measure of $\overline{AP}$, click ÷, click the measure of $\overline{A'P}$, and click OK.
2. Measure $\overline{AB}$ and $\overline{A'B'}$. Using the selection arrow tool, select the endpoints of $\overline{AB}$, and choose **Distance** from the **Measure** menu. Repeat this process for $\overline{A'B'}$. To calculate the ratio $\frac{AB}{A'B'}$, choose **Calculate** from the **Measure** menu. Then click the measure of $\overline{AB}$, click ÷, click the measure of $\overline{A'B'}$, and click OK.
3. Choose the translate selection arrow tool to drag point P to several locations outside $ABCDE$.
4. Choose the translate selection arrow tool to drag point P to several locations inside $ABCDE$.
5. Measure the areas of polygons $ABCDE$ and $A'B'C'D'E'$. Use the selection arrow tool to select the segments of $ABCDE$. Choose **Polygon Interior** from the **Construct** menu. Repeat this process for $A'B'C'D'E'$. Select the two polygon interiors and choose **Area** from the **Measure** menu. Calculate the ratio of the ar.Choose **Calculate** from the **Measure** menu. Click the area of $ABCDE$, click the ÷, click the area of $A'B'C'D'E'$, and click OK.