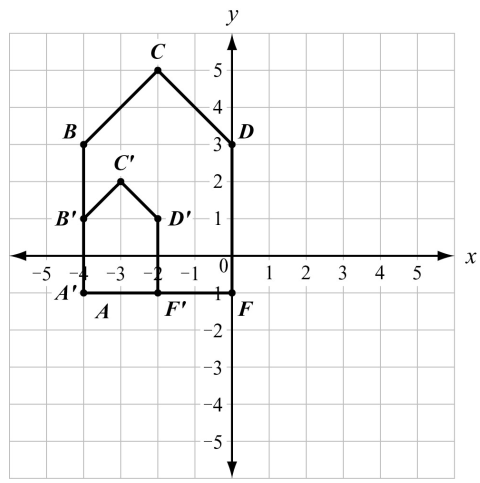
EOCT Practice Items

1) Figure $A'B'C'D'F'$ is a dilation of figure $ABCDF$ by a scale factor of $\frac{1}{2}$. The dilation is centered at (–4, –1).



Which statement is true?

A. $\frac{AB}{A'B'} = \frac{B'C'}{BC}$

B. $\frac{AB}{A'B'} = \frac{BC}{B'C'}$

C. $\frac{AB}{A'B'} = \frac{BC}{D'F'}$

D. $\frac{AB}{A'B'} = \frac{D'F'}{BC}$

[Key: B]

2) Which transformation results in a figure that is similar to the original figure but has a greater area?

A. a dilation of $\triangle QRS$ by a scale factor of 0.25

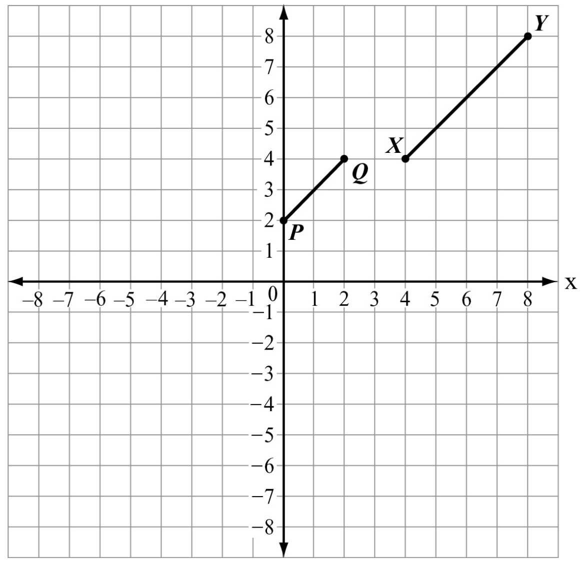
B. a dilation of $\triangle QRS$ by a scale factor of 0.5

C. a dilation of $\triangle QRS$ by a scale factor of 1

D. a dilation of $\triangle QRS$ by a scale factor of 2

[Key: D]

3) In the coordinate plane, segment $\overline{PQ}$ is the result of a dilation of segment $\overline{XY}$ by a scale factor of $\frac{1}{2}$.



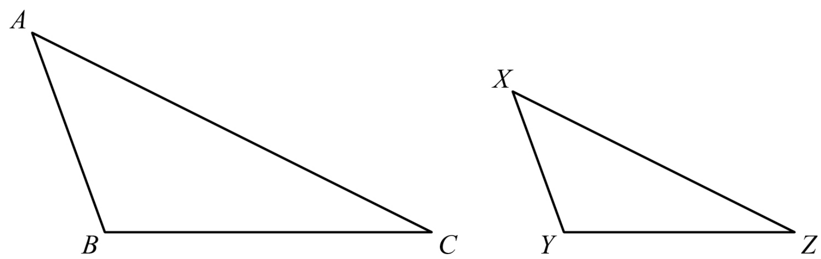
Which point is the center of dilation?

A. (–4, 0)
B. (0, –4)
C. (0, 4)
D. (4, 0)

[Key: A]

EOCT Practice Items

1) In the triangles shown, $\triangle ABC$ is dilated by a factor of $\frac{2}{3}$ to form $\triangle XYZ$.

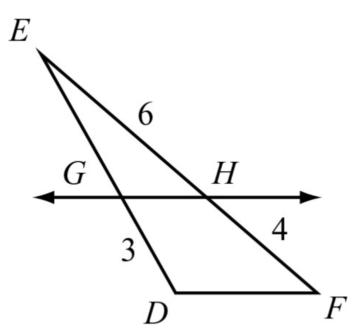


Given that $m\angle A = 50°$ and $m\angle B = 100°$, what is $m\angle Z$?

A. 15°
B. 25°
C. 30°
D. 50°

[Key: C]

2) In the triangle shown, $\overleftrightarrow{GH} \parallel \overline{DF}$.

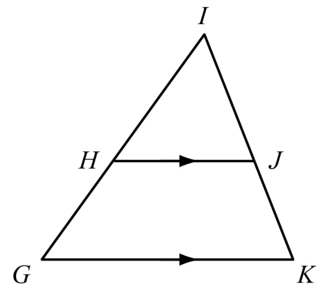


What is the length of $\overline{GE}$?

A. 2.0
B. 4.5
C. 7.5
D. 8.0

[Key: B]

3) Use this triangle to answer the question.



This is a proof of the statement "If a line is parallel to one side of a triangle and intersects the other two sides at distinct points, then it separates these sides into segments of proportional lengths."

	Step	Justification
1	$\overline{GK}$ is parallel to $\overline{HJ}$	Given
2	$\angle HGK \cong \angle IHJ$ $\angle IKG \cong \angle IJH$	?
3	$\triangle GIK \sim \triangle HIJ$	AA similarity postulate
4	$\frac{IG}{IH} = \frac{IK}{IJ}$	Corresponding sides of similar triangles are proportional
5	$\frac{HG + IH}{IH} = \frac{JK + IJ}{IJ}$	Segment addition postulate
6	$\frac{HG}{IH} = \frac{JK}{IJ}$	Subtraction property

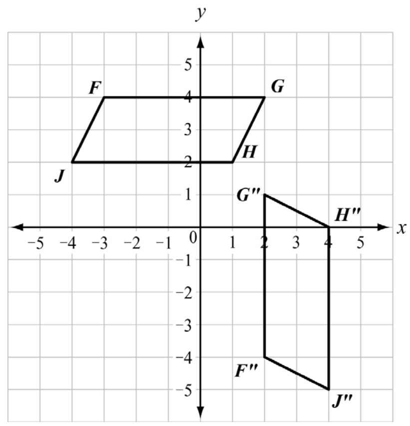
Which reason justifies Step 2?

A. Alternate interior angles are congruent.
B. Alternate exterior angles are congruent.
C. Corresponding angles are congruent.
D. Vertical angles are congruent.

[Key: C]

EOCT Practice Items

1) Parallelogram *FGHJ* was translated 3 units down to form parallelogram $F'G'H'J'$. Parallelogram $F'G'H'J'$ was then rotated 90° counterclockwise about point G' to obtain parallelogram $F''G''H''J''$.

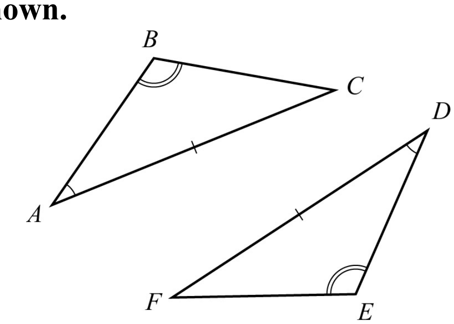


Which statement is true about parallelogram *FGHJ* and parallelogram $F''G''H''J''$?

A. The figures are both similar and congruent.
B. The figures are neither similar nor congruent.
C. The figures are similar but not congruent.
D. The figures are congruent but not similar.

[Key: A]

2) Consider the triangles shown.

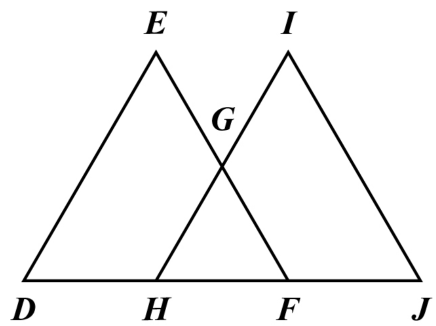


Which can be used to prove the triangles are congruent?

A. SSS
B. ASA
C. SAS
D. AAS

[Key: D]

3) In this diagram, $\overline{DE} \cong \overline{JI}$ and $\angle D \cong \angle J$.



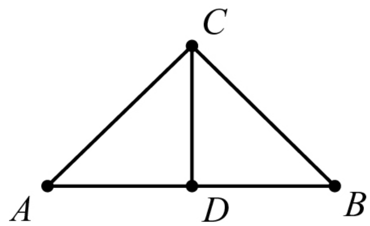
Which additional information is sufficient to prove that $\triangle DEF$ is congruent to $\triangle JIH$?

A. $\overline{EF} \cong \overline{IH}$
B. $\overline{DH} \cong \overline{JF}$
C. $\overline{HG} \cong \overline{GI}$
D. $\overline{HF} \cong \overline{JF}$

[Key: B]

EOCT Practice Items

1) In this diagram, $\overline{CD}$ is the perpendicular bisector of $\overline{AB}$. The two-column proof shows that $\overline{AC}$ is congruent to $\overline{BC}$.



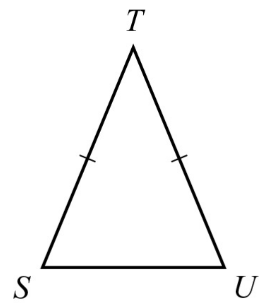
Step	Statement	Justification
1	$\overline{CD}$ is the perpendicular bisector of $\overline{AB}$	Given
2	$\overline{AD} \cong \overline{BD}$	Definition of bisector
3	$\overline{CD} \cong \overline{CD}$	Reflexive Property of Congruence
4	$\angle ADC$ and $\angle BDC$ are right angles	Definition of perpendicular lines
5	$\angle ADC \cong \angle BDC$	All right angles are congruent
6	$\triangle ADC \cong \triangle BDC$	______?______
7	$\overline{AC} \cong \overline{BC}$	CPCTC

Which theorem would justify Step 6?

A. AAS
B. ASA
C. SAS
D. SSS

[Key: C]

2) In this diagram, *STU* is an isosceles triangle where $\overline{ST}$ is congruent to $\overline{UT}$. The paragraph proof shows that $\angle S$ is congruent to $\angle U$.



It is given that $\overline{ST}$ is congruent to $\overline{UT}$. Draw $\overline{TV}$ that bisects $\angle T$. By the definition of an angle bisector, $\angle STV$ is congruent to $\angle UTV$. By the Reflexive Property, $\overline{TV}$ is congruent to $\overline{TV}$. Triangle *STV* is congruent to triangle *UTV* by SAS. $\angle S$ is congruent to $\angle U$ by ______?______.

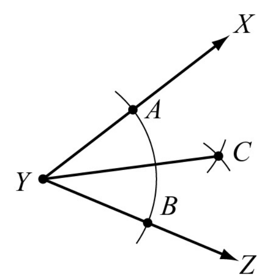
Which step is missing in the proof?

A. CPCTC
B. Reflexive Property of Congruence
C. Definition of right angles
D. Angle Congruence Postulate

[Key: A]

EOCT Practice Items

1) Consider the construction of the angle bisector shown.



Which could have been the first step in creating this construction?

A. Place the compass point on point A and draw an arc inside $\angle Y$.

B. Place the compass point on point B and draw an arc inside $\angle Y$.

C. Place the compass point on vertex Y and draw an arc that intersects $\overline{YX}$ and $\overline{YZ}$.

D. Place the compass point on vertex Y and draw an arc that intersects point C.

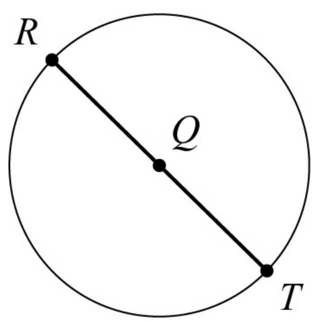
[Key: C]

2) Consider the beginning of a construction of a square inscribed in circle *Q*.

Step 1: Label point *R* on circle *Q*.

Step 2: Draw a diameter through *R* and *Q*.

Step 3: Label the intersection on the circle point *T*.



What is the next step in this construction?

A. Draw radius $\overline{SQ}$.

B. Label point S on circle Q.

C. Construct a line segment parallel to $\overline{RT}$.

D. Construct the perpendicular bisector of $\overline{RT}$.

[Key: D]