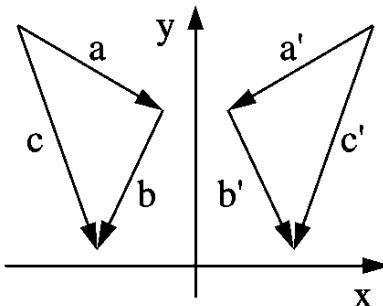


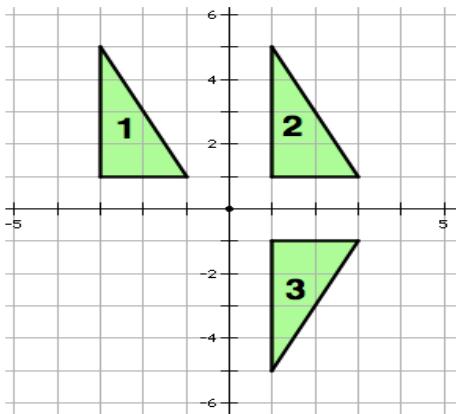
## Similarity and Congruence EOC Assessment (35%)

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1. What term is used to describe two or two line segments that share a common endpoint?
  - a. Perpendicular Lines
  - b. Angle
  - c. Parallel lines
  - d. Intersection
2. What is a term used to describe two lines that intersect to form a right angle?
  - a. Parallel Lines
  - b. An Intersection
  - c. An angle
  - d. Perpendicular Lines
3. What type of transformation moves  $P(3, -7)$  onto  $P'(3, 7)$ ?
  - a. Reflection over x-axis
  - b. Rotation  $90^\circ$
  - c. Reflection over y-axis
  - d. Rotation  $270^\circ$
4. What are the coordinates of a  $90^\circ$  counterclockwise rotation using points  $(-5, 8)$ ?
  - a.  $(-8, 5)$
  - b.  $(-5, -8)$
  - c.  $(-8, -5)$
  - d.  $(-5, 8)$
5. The coordinates of a quadrilateral are  $(5, 8)$ ,  $(7, 10)$ ,  $(9, 12)$ , and  $(11, 14)$ . After a transformation, the sign of the y-coordinate for each ordered pair has changed. Which type of transformation occurred?
  - A)  $(x, y) \rightarrow (x + 2, y + 2)$
  - B) dilation;  $(x + 2), (y + 2)$
  - C) reflection across the y-axis
  - D) reflection across the x-axis
6. A Reflection of triangle abc to  $a'b'c'$  is shown. Which function notation describes this transformation?
  - A)  $f(x, y) \rightarrow (y, x)$
  - B)  $f(x, y) \rightarrow (x, -y)$
  - C)  $f(x, y) \rightarrow (-x, y)$
  - D)  $f(x, y) \rightarrow (-x, -y)$
7. Which transformation is not always congruent with its original image?
  - a. Reflection
  - b. Rotation
  - c. Translation
  - d. Dilation

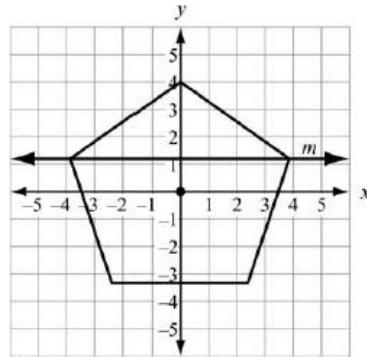
## Similarity and Congruence EOC Assessment (35%)

8. The triangle 1 is transformed as shown in the diagram, resulting in triangle 3. What are the transformations?



- A. Rotation, then translation
  - B. Translation, then reflection
  - C. Reflection, then translation
  - D. Dilation, then reflection
9. Quadrilateral RAPS is located at the vertices  $R(-4,1)$ ,  $A(-3,4)$ ,  $P(0,5)$ ,  $S(-1,1)$ . Where will points  $R''A''P''S''$ , be located after the quadrilateral has been reflected across the line  $y = x$  and then rotated  $180^\circ$  about the origin?
- A.  $R''(1,4)$ ,  $A''(4,3)$ ,  $P''(5,0)$ ,  $S''(1,1)$
  - B.  $R''(1,-4)$ ,  $A''(4,-3)$ ,  $P''(5,0)$ ,  $S''(1,-1)$
  - C.  $R''(-1,4)$ ,  $A''(-4,3)$ ,  $P''(-5,0)$ ,  $S''(-1,1)$
  - D.  $R''(-4,1)$ ,  $A''(-3,4)$ ,  $P''(0,5)$ ,  $S''(-1,1)$

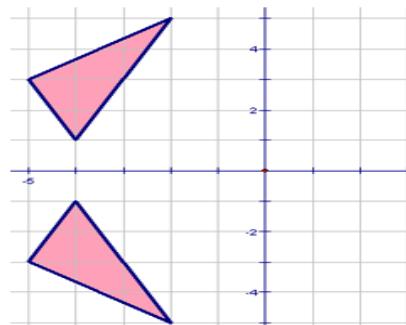
10. A regular pentagon is centered about the origin and has a vertex at  $(0, 4)$ . (G.CO.4)



Which transformation maps the pentagon to itself?

- A. A clockwise rotation of  $216^\circ$  about the origin
- B. A clockwise rotation of  $90^\circ$  about the origin
- C. A reflection across line  $m$
- D. A reflection across the  $x$ -axis

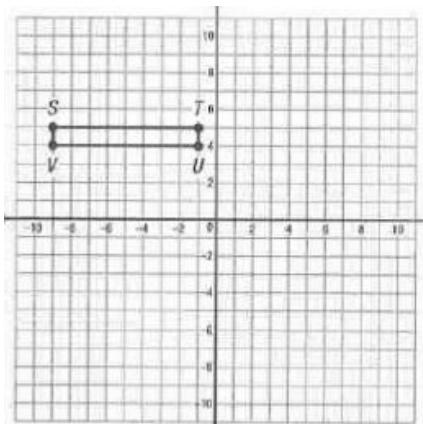
11. Which best describes the transformation that occurs in the graph?



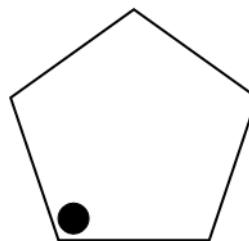
- a. Dilation by a scale factor of 3.
- b. Reflection across the  $x$ -axis.
- c. Rotation of  $180^\circ$  CW.
- d. Translation +2 units vertically.

## Similarity and Congruence EOC Assessment (35%)

12. Rectangle STUV is graphed on the coordinate plane below. (G.CO.4)



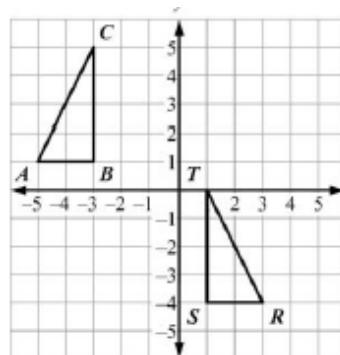
13. Which of the following maps the figure onto itself?



Which series of transformations will map rectangle STUV onto itself?

- A. Reflection over the y-axis, rotation around the origin  $180^\circ$  clockwise, and then reflection over the y-axis
- B. Reflection over the x-axis, reflection over the y-axis, and then rotation around the origin  $270^\circ$  counterclockwise
- C. Reflection over the y-axis, reflection over the x-axis, and then rotation around the origin  $180^\circ$  counterclockwise
- D. Reflection over the x-axis, reflection over the y-axis, and then rotation around the origin  $90^\circ$  clockwise

14. Which sequence of transformations maps  $\triangle ABC$  to  $\triangle RST$ ? (G.CO.5)

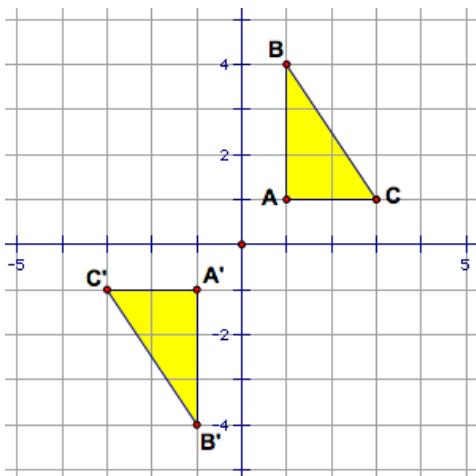


- A. Reflect  $\triangle ABC$  across the line  $x = -1$ . Then translate the result 1 unit down.
- B. Reflect  $\triangle ABC$  across the line  $x = -1$ . Then translate the result 5 units down.
- C. Translate  $\triangle ABC$  6 units to the right. Then rotate the result  $90^\circ$  clockwise about the point  $(1, 1)$ .
- D. Translate  $\triangle ABC$  6 units to the right. Then rotate the result  $90^\circ$  counterclockwise about the point  $(1, 1)$ .

## Similarity and Congruence EOC Assessment (35%)

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- 15.. Triangle ABC is reflected across the x-axis, and then across the y-axis. Which rotation is equivalent to this composition of transformations?

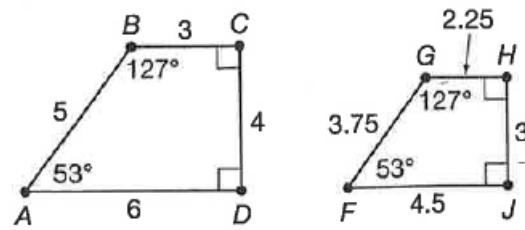


- A. A 45 Degree Rotation
- B. A 90 Degree Rotation
- C. A 180 Degree Rotation
- D. A 360 Degree Rotation

16.  **$AB$  is 6.7 units long. If  $AB$  is dilated by a scale factor of  $k = 3.2$ , what is the length of  $A'B'$  ?**

- a. 21.4 units
- b. 2.1 units
- c. 0.5 unit
- d. 1 unit

17. **Which statement is true of trapezoid ABCD and trapezoid FGHJ?**



- A. They are similar because corresponding angles are congruent and corresponding side lengths are in the same ratio  $\frac{5}{3}$
- B. They are similar because corresponding angles are congruent and corresponding side lengths are in the same ratio  $\frac{4}{3}$
- C. They are not similar because corresponding angles are not congruent.
- D. They are not similar because corresponding sides are not proportional in length.

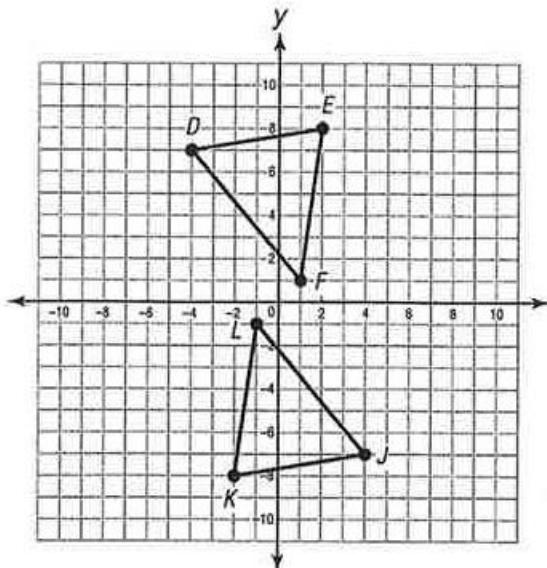
18. Which of the following statements is **not** true?

- A. Similar figures have corresponding angles that are equal in measures.
- B. Similar figures have corresponding side that is equal in length
- C. Dilating a triangle by a scale factor less than 1 result in a similar triangle with shorter sides.
- D. Dilating a triangle by a scale factor greater than 1 result in a similar triangle with longer sides

## Similarity and Congruence EOC Assessment (35%)

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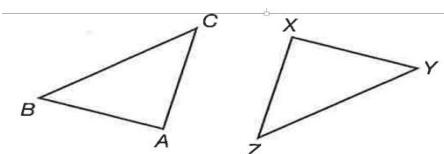
19. Triangle DEF is rotated 180 degrees around the origin to form JKL



Which of the following statements must be true?

- A.  $\overline{DF} \cong \overline{JL}$
- B.  $\angle D \cong \angle K$
- C.  $\overline{EF} \cong \overline{JK}$
- D.  $\angle F \cong \angle J$

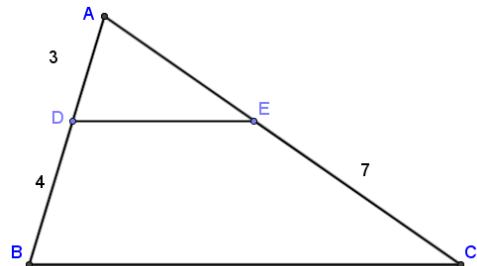
20. Triangle ABC and XYZ are shown below.



Which of the following properties of triangles ABC and XYZ would indicate that triangle ABC is congruent to triangle XYZ?

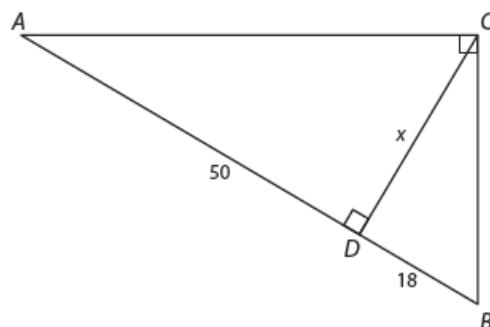
- A.  $\angle A \cong \angle X$ ,  $\overline{AB} \cong \overline{BC}$ ,  $\overline{XY} \cong \overline{XZ}$
- B.  $\angle B \cong \angle Y$ ,  $\overline{AB} \cong \overline{XY}$ ,  $\angle A \cong \angle X$
- C.  $\angle C \cong \angle Z$ ,  $\overline{CA} \cong \overline{ZX}$ ,  $\overline{AB} \cong \overline{XY}$
- D.  $\angle A \cong \angle X$ ,  $\angle B \cong \angle Y$ ,  $\angle C \cong \angle Z$

21. Given  $\overline{DE} \parallel \overline{BC}$ . Find the length of  $\overline{AE}$ . (SRT.4)



- A. 4
- B. 5.25
- C. 21.6
- D. 14

22.  $\triangle ABC$  is a right triangle. Find the length of x.



- A. 30 units
- B. 7.7 units
- C. 2.7 units
- D. There is not enough information to determine the length of x.

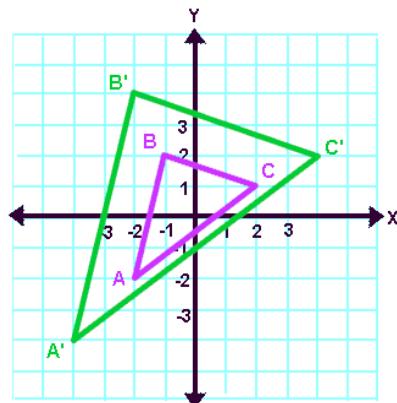
## Similarity and Congruence EOC Assessment (35%)

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**23. The length of a building's shadow 107.2 feet. At the same time of day, a foot-tall tree casts a shadow that is 2. long. What is the height of the buildin**

- A. 80.4 feet
- B. 142.9 feet
- C. 24.8 feet
- D. 463.1 feet

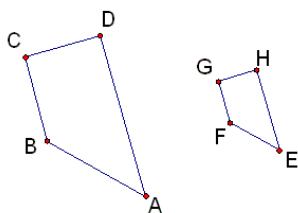
**24. What is the scale factor for the figure below?**



- A..2
- B.  $\frac{1}{2}$
- C. 3
- D.  $\frac{1}{3}$

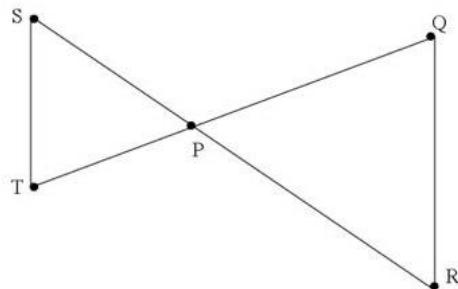
**25. The quadrilaterals are similar.**

If  $CB = 6$ ,  $GF = 3$ , and  $CD = 4$ , find  $GH$ .



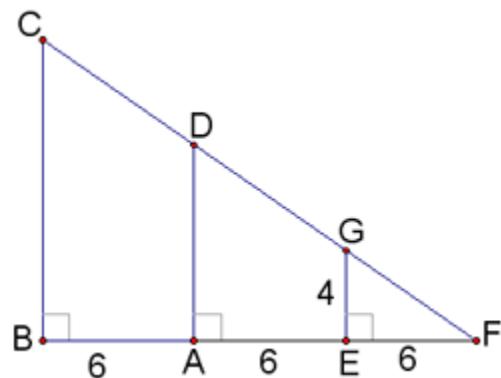
- A..2
- B. 3
- C. 8
- D. 10

**26. Which statement MUST be true?**



- A)  $m\angle PST = m\angle RPQ$
- B)  $m\angle TPS = m\angle PQR$
- C)  $m\angle SPQ = m\angle TPR$
- D)  $m\angle PQR = m\angle PST$

**27. Solve for BC.**

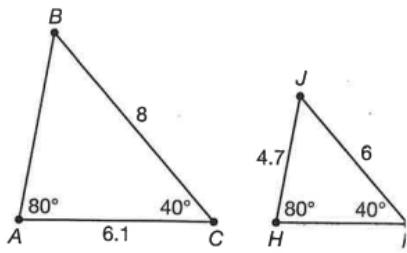


- A..12
- B. 10
- C. 8
- D. 6

## Similarity and Congruence EOC Assessment (35%)

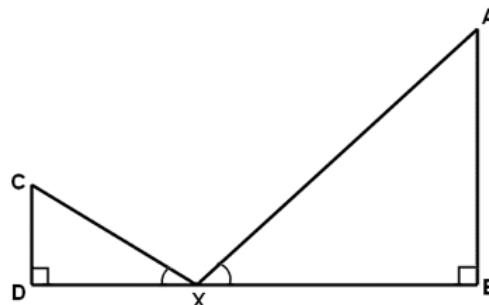
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- 28. Which of the following can be used to show that  $\triangle ABC$  is similar to  $\triangle HJK$  using the information given?**



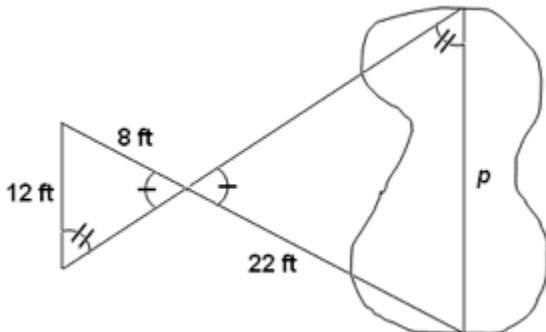
- A. AA ~ postulate
- B. Triangle similarity theorem
- C. SAS ~ theorem
- D. SSS ~ theorem

- 30. Triangle CDX is similar to triangle ABX. Which proportion can be used to find the length of side CD?**



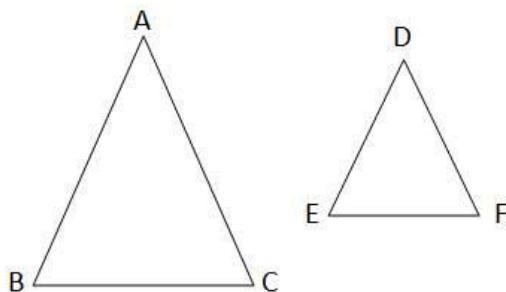
- A)  $\frac{AB}{BX} = \frac{CD}{CX}$
- B)  $\frac{AB}{CD} = \frac{AX}{CX}$
- C)  $\frac{AB}{CD} = \frac{BX}{CX}$
- D)  $\frac{AB}{BX} = \frac{CD}{AX}$

- 29. Edwina measured the length of this swimming pool by drawing similar triangles as shown. What is the best estimate of  $p$ , the length of the swimming pool?**



- A. 14ft
- B. 20ft
- C. 33ft
- D. 44ft

- 31. If  $\triangle ABC$  is similar to  $\triangle DEF$ , the  $m\angle A = 50^\circ$ , and  $m\angle E = 70^\circ$ , what is  $m\angle C$ ?**

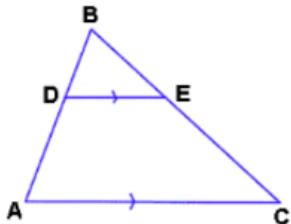


- A. 60
- B. 70
- C. 90
- D. 120

## Similarity and Congruence EOC Assessment (35%)

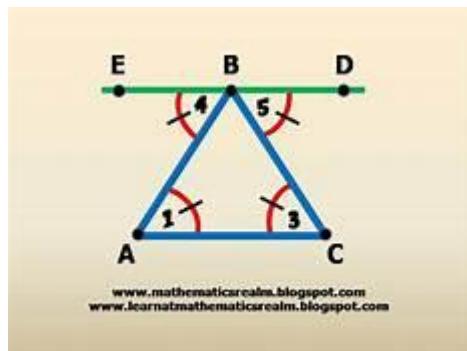
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32. Given:  $\overline{DE} \parallel \overline{AC}$  Prove:  $\Delta BDE \sim \Delta BAC$   
 Which reason justifies both steps 2 and 3?  
**MGSE9-12.G.SRT.4**



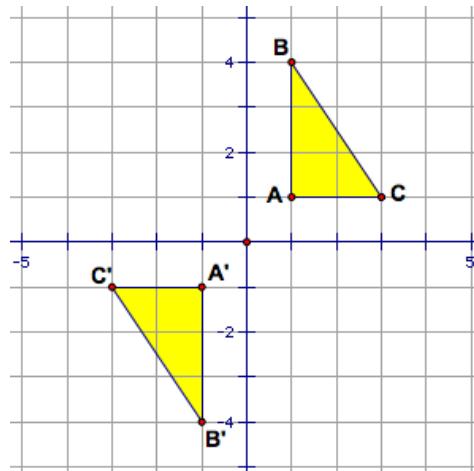
Statements	Reasons
$\overline{DE} \parallel \overline{AC}$	Given
$\angle BAC \cong \angle BDE$	?
$\angle BED \cong \angle BCA$	?
$\Delta BDE \sim \Delta BAC$	AA

- A. Same Side Interior Angles  
 B. Corresponding Angles  
 C. Alternate Interior Angles  
 D. Alternate Exterior Angles
33. Angles 1 and 4 are which of the following?

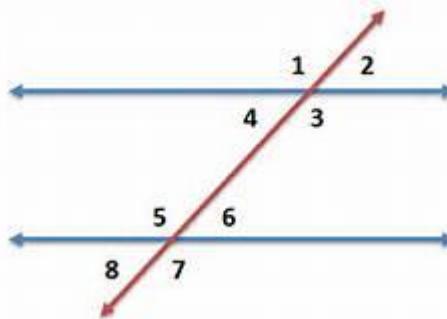


- A. Same Side Interior Angles  
 B. Corresponding Angles  
 C. Alternate Interior Angles  
 D. Alternate Exterior Angles

34. Which of the following represents the transformation?



- A..Similar  
 B. Congruent  
 C. Both similar and congruent  
 D. Neither similar or congruent
35. Which of the following is correct?

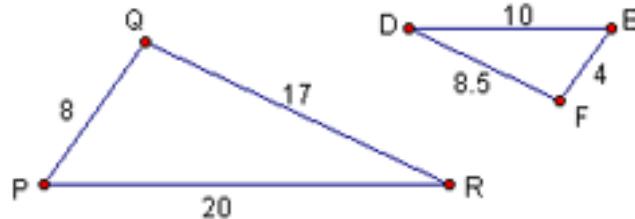


- A..  $\angle 1 \cong \angle 8$   
 B.  $\angle 1 + \angle 3 = 180$   
 C.  $180 - \angle 7 = \angle 2$   
 D.  $\angle 2 \cong \angle 5$

## Similarity and Congruence EOC Assessment (35%)

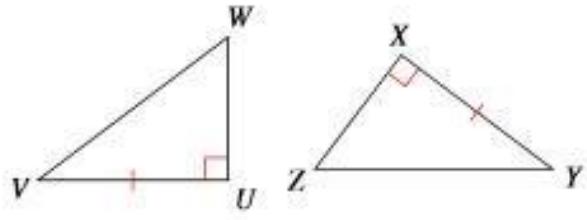
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36. The triangles shown are similar. Which side corresponds to  $QR$ ?



- A)  $\overline{FE}$
- B)  $\overline{ED}$
- C)  $\overline{FD}$
- D)  $\overline{QP}$

38. What additional information can be used to prove  $\triangle VUW \cong \triangle YXZ$  by SAS?

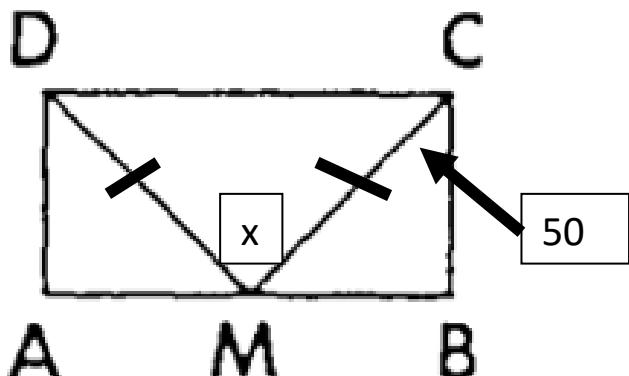


- A)  $WU \cong ZX$
- B)  $WU \cong ZY$
- C)  $XZ \cong VU$
- D)  $XY \cong VU$

37. All of these methods can be used to show that two triangles are similar EXCEPT

- A) SS.
- B) SAS.
- C) AA.
- D) SSS.

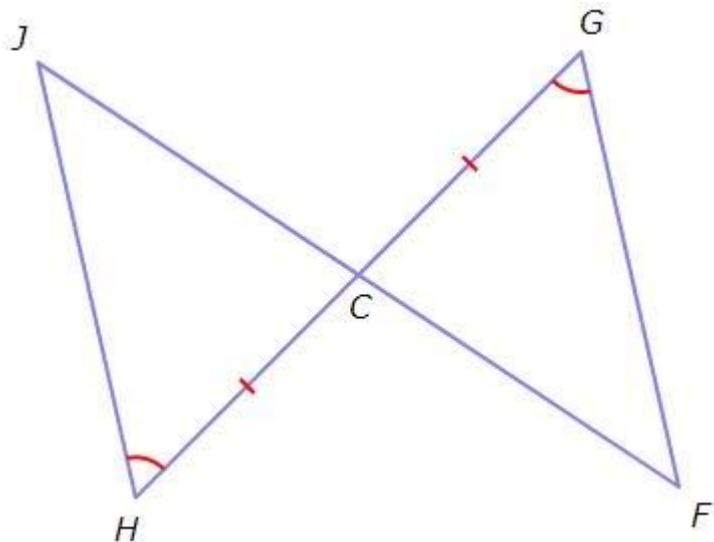
39. Solve for  $x$



- A..80
- B. 100
- C.120
- D.125

## Similarity and Congruence EOC Assessment (35%)

40. By which rule are these triangles congruent?



A) AAS

B) ASA

C) SAS

D) SSS