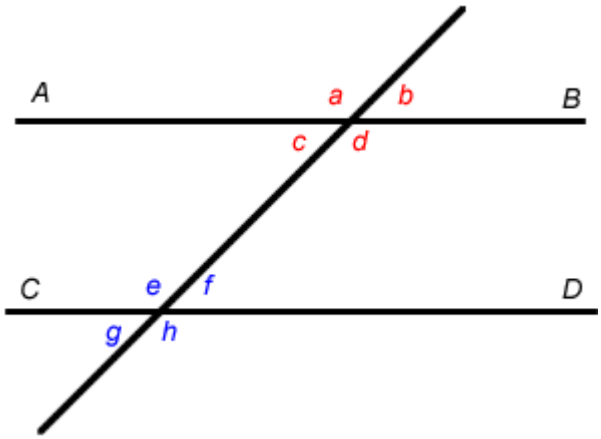
Geometry Midterm Review Stephanides

Student Name: _____ Date: _____

Teacher Name: ANGELA STEPHANIDES Score: _____

1)



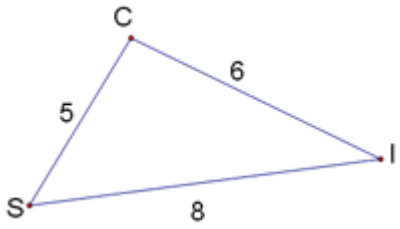
In the diagram, line AB is parallel to line CD. Assume that ∠b = 6x + 8 and that ∠g = 4x + 12. Find the value of x.

A) 2
B) 3
C) 4
D) 10

2) Find the equation of a line that is parallel to y = 5x + 7 and passes through (4, 3).

Answer: _____

3)



Use the triangle inequality theorem to determine the smallest angle in the figure.

A) ∠SCI
B) ∠CIS
C) ∠CSI
D) ∠ISC

4) What is the correct notation for a ray with endpoint E?

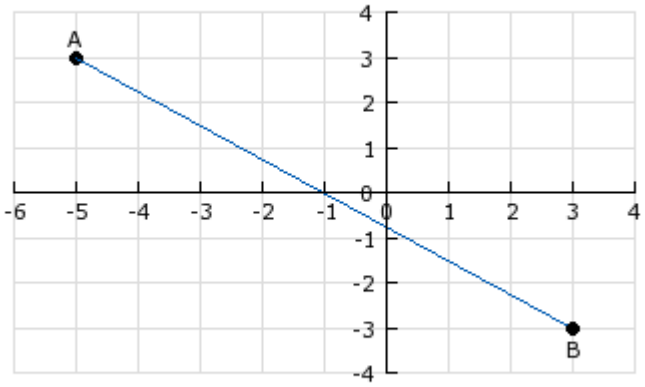
A) $\overrightarrow{BE}$

B) $\overrightarrow{EA}$

C) $\overleftrightarrow{EA}$

D) $\overset{\frown}{EB}$

5)



What is the length of line segment $\overline{AB}$?

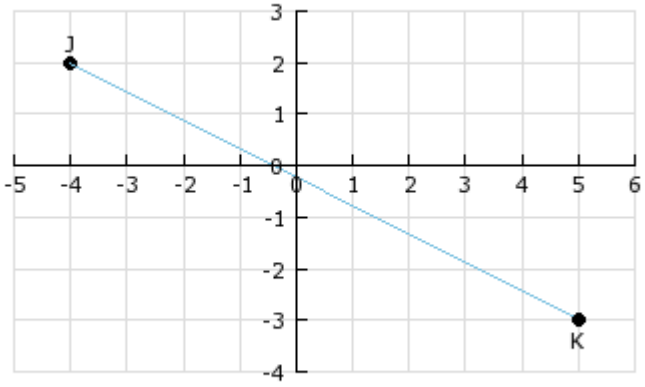
A) 6 units

B) 8 units

C) 10 units

D) 14 units

6)



$$M=(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2})$$

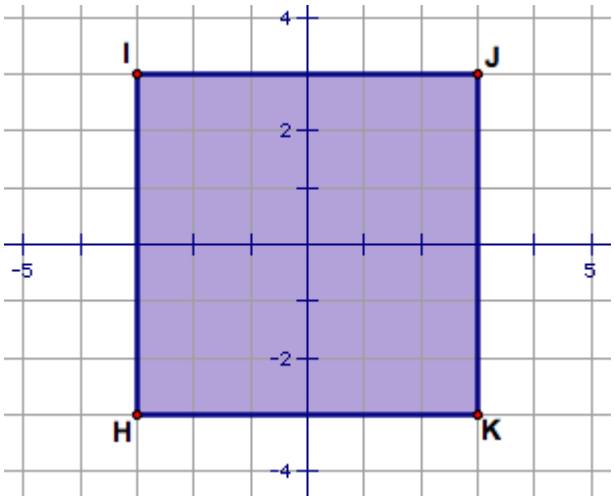
What is the midpoint of segment *JK* shown in the graph?

A) (-2, 2)
B) (2, -2)
C) $(\frac{1}{2}, -\frac{1}{2})$
D) $(-\frac{1}{2}, \frac{1}{2})$

7) Rectangle PQRS has vertices at P(-3, 5), Q(8, 5), R(8, 0) and S. The coordinates of point S are

Answer: _____

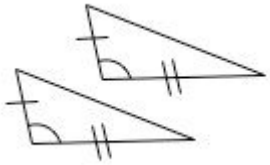
8)

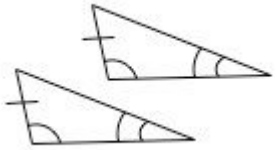


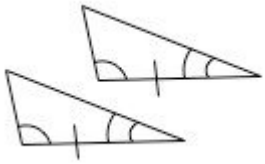
If square HIJK is dilated by a scale factor of $\frac{1}{3}$ with a dilation center of (0, 0), what will be the coordinates of point K'?

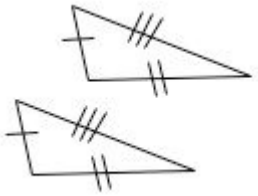
A) (1, 1)
B) (-1, 1)
C) (1, -1)
D) (0, -1)

9) For which pair of triangles would you use ASA to prove the congruence of the 2 triangles?

A) 

B) 

C) 

D) 

10) Δ ABC is isosceles with m∠B ≅ m∠C. If m∠A = 100°, m∠B = (12x + 4)°, and m∠C = (14x - 2)°, find x.

A) 1
B) 3
C) 5
D) 7

11) Find the point, M, that divides segment AB into a ratio of 2:1 if A is at (-1, 2) and B is at (8, 15).

A) (6, 8)

B) $(6, \frac{26}{3})$

C) $(5, \frac{32}{3})$

D) $(5, \frac{26}{3})$

12) What is two rays sharing a common endpoint?

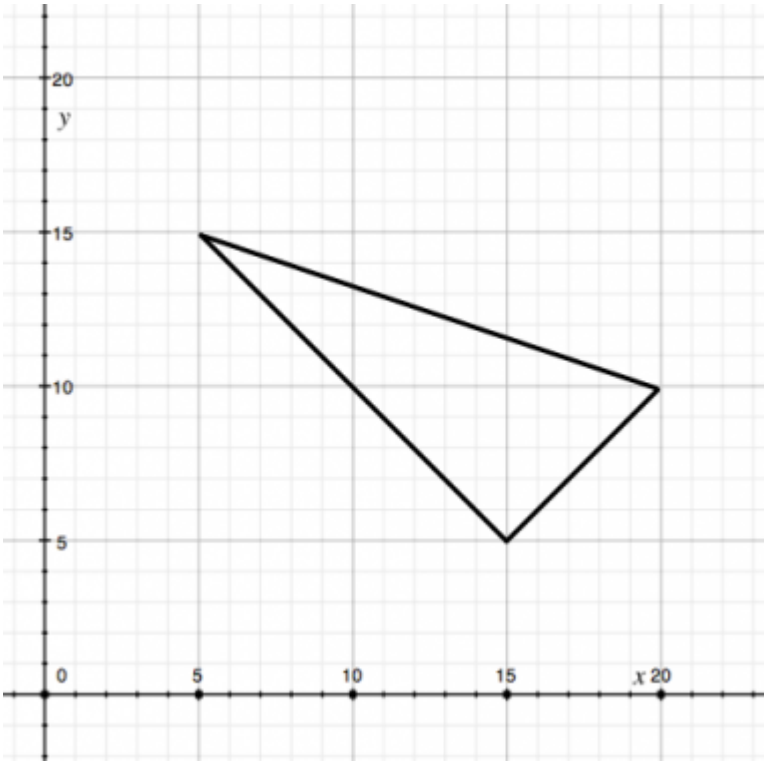
A) angle

B) circle

C) triangle

D) line segment

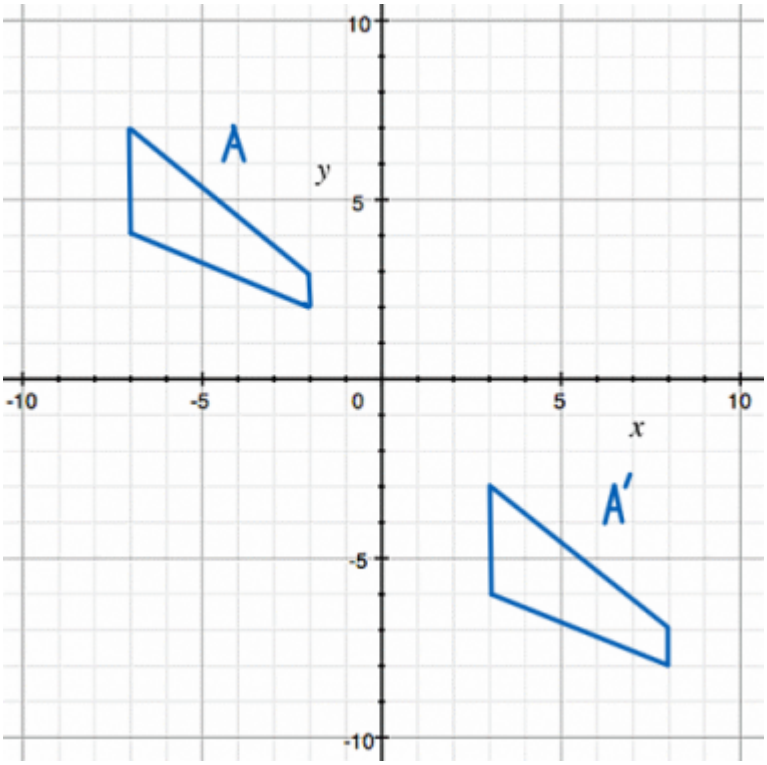
13)



Compute the area of the triangle (round to the nearest integer).

Answer: _____

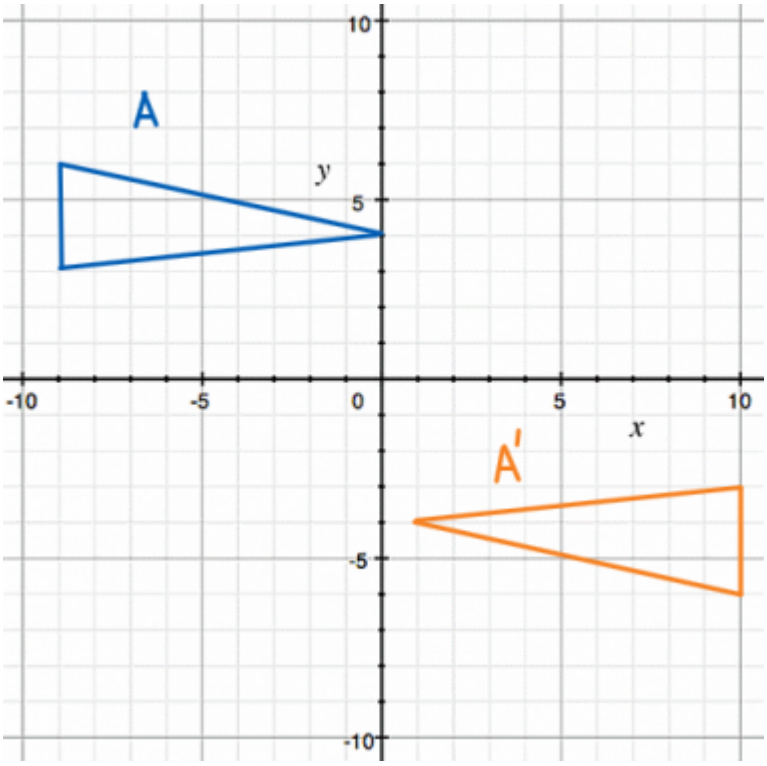
14)



Describe the transformation that maps the pre-image A to the image A'.

A) translated 10 units to left and then 10 units up
B) translated 10 units to right and then 10 units down
C) translated 10 units down and then reflected across the y-axis
D) translated 10 units to right and then reflected across the x-axis

15)

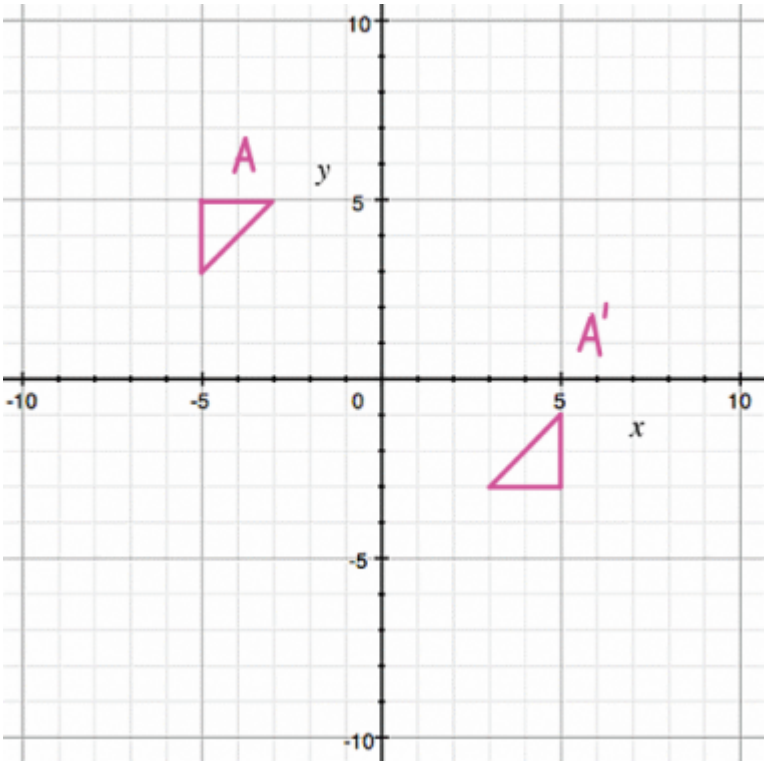


Describe the transformation that maps the pre-image A to the image A'.

A) translated 8 units up and then reflected across the y-axis
B) translated 8 units down and then reflected across the y-axis
C) translated 1 unit to left and then rotated 180° counterclockwise about the origin

D) translated 1 unit to right and then rotated 180° counterclockwise about the origin

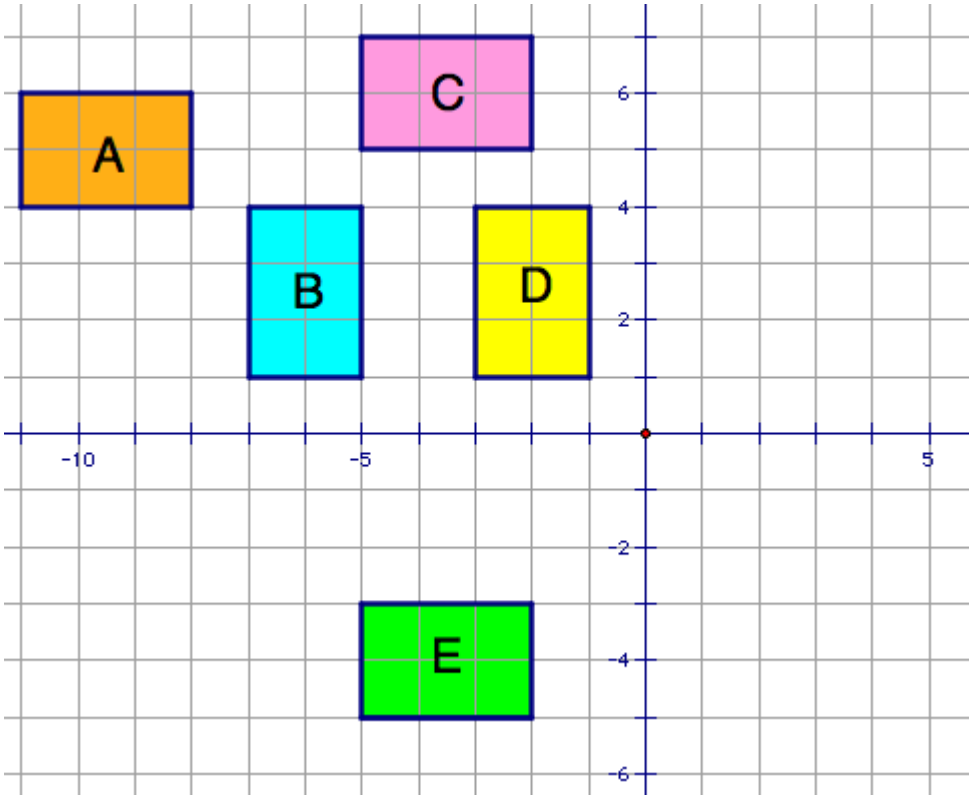
16)



Select the sequence of transformations that will carry triangle A onto triangle A'.

A) translate 6 units down, then reflect across y-axis
B) reflect over y-axis, reflect over x-axis, then 2 units up
C) reflect over x-axis, translate 2 units up, then 8 units left
D) reflect over x-axis, rotate 90° clockwise, then translate 4 units down

17)



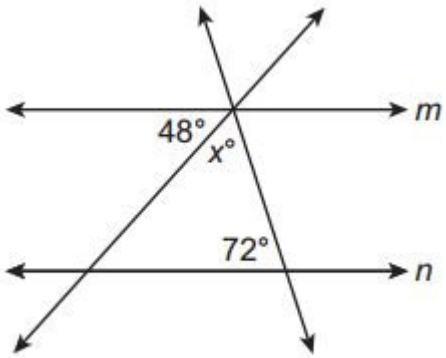
Which rectangle if translated 6 units down and then rotated 90° clockwise about the point (-5, -5) will result in rectangle E?

A) Rectangle A
B) Rectangle B
C) Rectangle C
D) Rectangle D

18) Suppose that on a coordinate plane a hexagon is reflected across the x-axis. Compare the area of the original hexagon to the area of the transformed figure. Justify your answer.

A) The areas may or may not be the same because the scale is not given.
B) The areas are equal. A reflection is a rigid transformation, which does not change the size of the original hexagon. Therefore, the area is preserved.
C) The area of the original hexagon is greater than the transformed figure. A reflection decreases the size of the original polygon. Therefore, the area is not preserved.
D) The area of the transformed hexagon is greater than the original figure. A reflection increases the size of the original polygon. Therefore, the area is not preserved.

19)

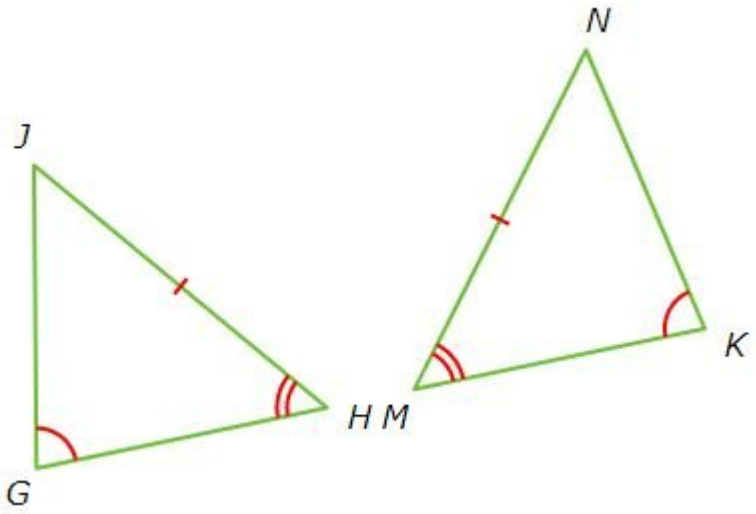


Two lines intersect parallel lines m and n as shown.

What is the value of x?

A) 24
B) 48
C) 60
D) 66

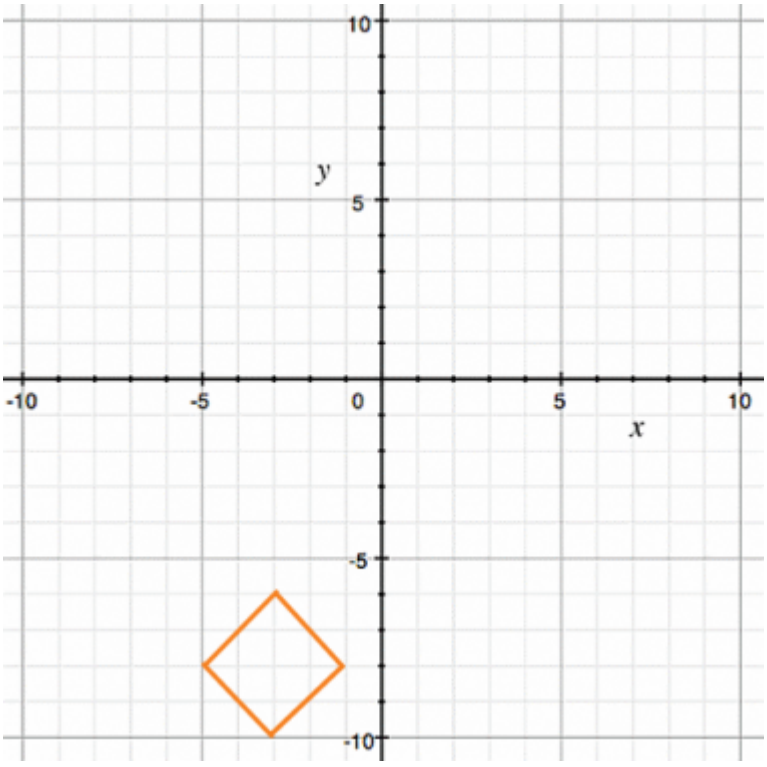
20)



By which rule are these triangles congruent?

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

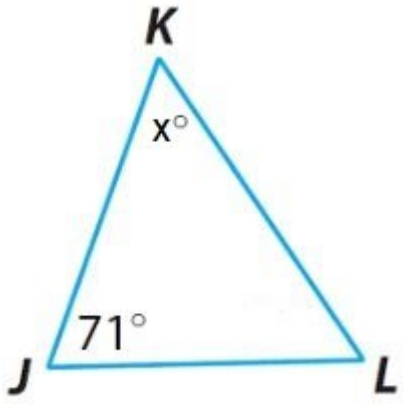
21)



Identify the transformation that carries the figure onto itself.

A) reflect across the line x = −5 and rotate 180° clockwise about (−3, −8)
B) reflect across the line y = −5 and rotate 180° clockwise about (−3, −8)
C) reflect across the line x = −3 and rotate 360° clockwise about (−3, −8)
D) reflect across the line y = −3 and rotate 360° clockwise about (−3, −8)

22)

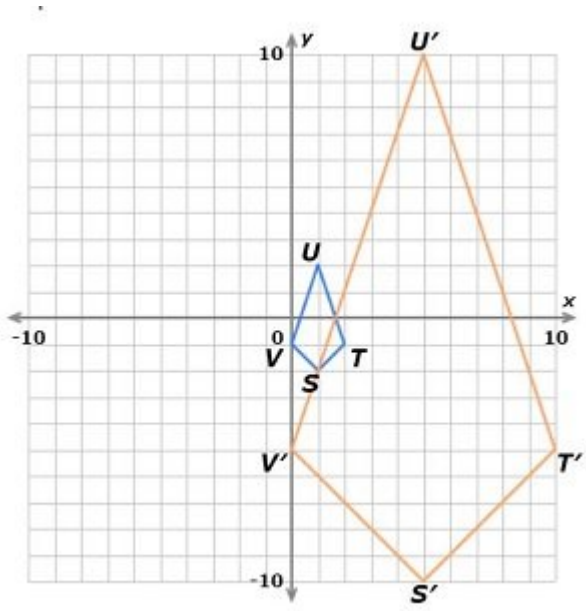


Note: Figure not drawn to scale.

In triangle JKL, what is the value of x° if JK = KL?

A) 38°
B) 60°
C) 69°
D) 71°

23)



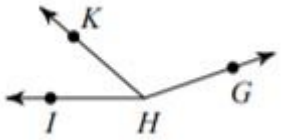
Which rule yields the dilation of the figure STUV centered at the origin?

A) $(x, y) \rightarrow (5x, 5y)$
B) $(x, y) \rightarrow (0.2x, 0.2y)$
C) $(x, y) \rightarrow (x + 5, y + 5)$
D) $(x, y) \rightarrow (x + 0.2, y + 0.2)$

24) Which set of line segments can be used to construct a triangle?

A) 2 cm, 6 cm, and 1 cm
B) 3 cm, 3 cm, and 2 cm
C) 4 cm, 2 cm, and 8 cm
D) 4 cm, 3 cm, and 9 cm

25)

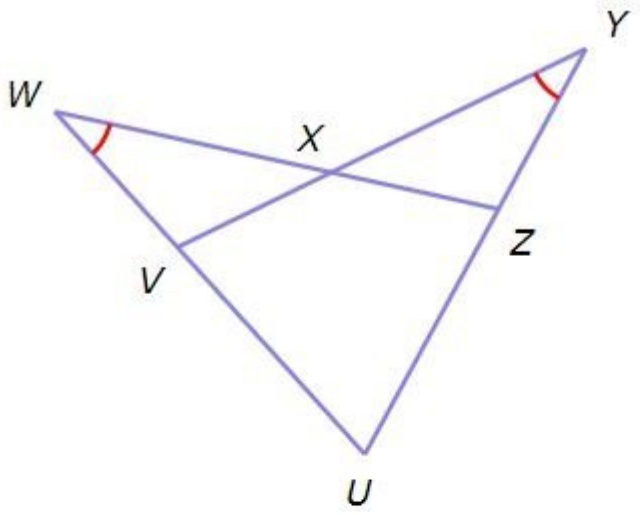


Find m∠KHG.

m∠IHG = 161°
m∠IHK = (3x + 4)°
m∠KHG = (7x + 7)°

A) 112°
B) 114°
C) 116°
D) 118°

26)



	Statement	Reason
1	$\overline{UW} \cong \overline{UY}$	Given
2	$\angle Y \cong \angle W$	Given
3	$\angle U \cong \angle U$	Reflexive Property of Congruence
4	$\triangle UVY \cong \triangle UZW$	

Complete the proof.

Prove: △UVY ≅ △UZW

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

27) A sequence of transformations which moves ΔFGH onto ΔIJK shows that ΔFGH ≅ ΔIJK. Which part of the triangles are congruent by CPCTC?

A) ∠G ≅ ∠I
B) ∠J ≅ ∠G
C) ∠K ≅ ∠F
D) ∠H ≅ ∠I

28) Find the equation of the line that is perpendicular to y = −3x + 1 and passes though the point (6, 3).

A) $y = \frac{1}{3}x + 1$
B) $y = -\frac{1}{3}x + 1$
C) y = 3x − 5
D) y = −3x − 5