CP Geometry
Quarter 1 Exam

Tools of Geometry, Congruence and Transformations

Name: _____

Block: _____

Date: _____

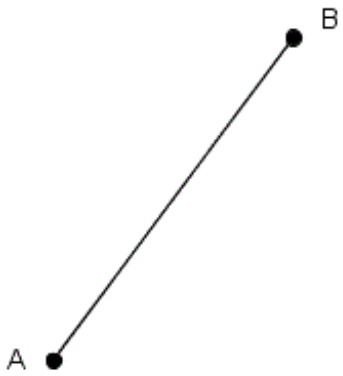
Section	Points Earned	Points Possible
I		60
II		20
III		20
Total		100

I. Multiple Choice – 3 points each

Identify the letter of the choice that best completes the statement or answers the question.

1.) Which of the following terms best describes the picture below?

(A) Line
(B) Ray
(C) Line Segment
(D) Plane

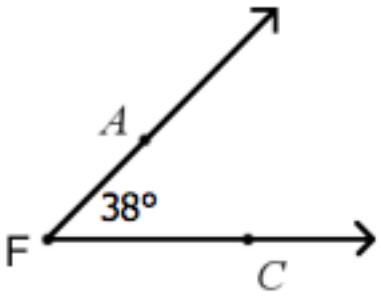


2.) Which of the following statements best defines parallel lines?

(A) Two coplanar lines that intersect at 90 degrees
(B) Two coplanar lines that do not intersect
(C) Two rays with a common endpoint that point in opposite directions
(D) Two rays sharing a common endpoint.

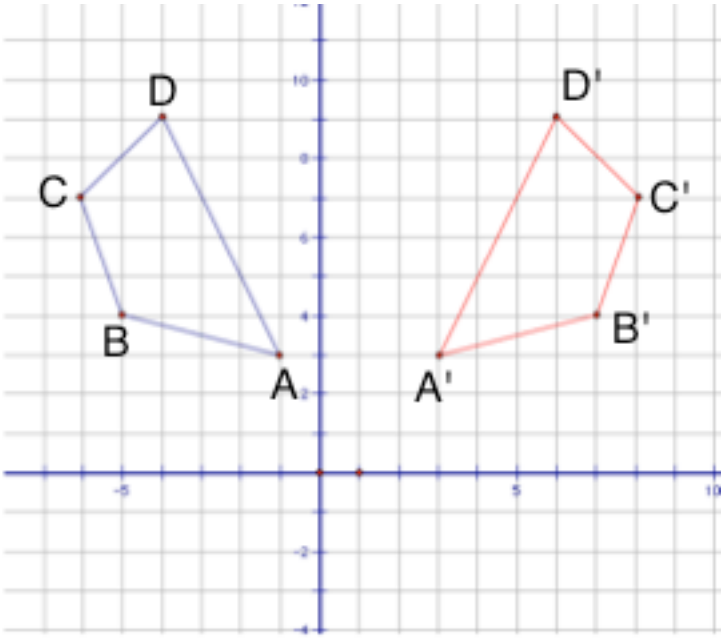
3.) Classify $\angle AFC$

(A) Acute
(B) Obtuse
(C) Straight
(D) Right



4.) Which transformation is seen below?

(A) Reflection over line y = 1
(B) Reflection over x-axis
(C) Reflection over y-axis
(D) Reflection over the line x = 1

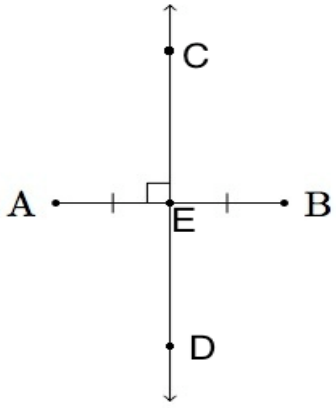


5.) If two lines are not parallel and do not intersect, then they are

(A) Perpendicular
(B) 180°
(C) Skew
(D) Obtuse

6.) Which of the following statements is **FALSE** given the picture below?

(A) $\overline{AE} \cong \overline{EB}$
(B) $\overleftrightarrow{CD}$ bisects $\overline{AB}$
(C) $\overline{AB} \perp \overleftrightarrow{CD}$
(D) $\overline{AB}$ bisects $\overleftrightarrow{CD}$

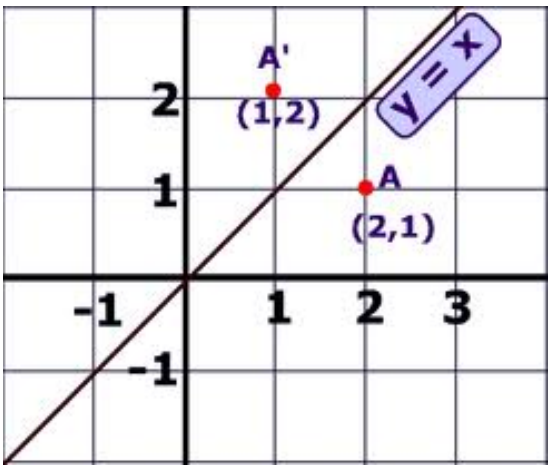


7.) A square can be categorized in many different ways. Which of the following statements is FALSE?

(A) A square is a parallelogram
(B) A square is a trapezoid
(C) A square is a rhombus
(D) A square is a quadrilateral

8.) Which of the following represents the rule for reflecting over the line y=x. Use the picture below to help you find the answer.

(A) (x, y) → (y, x)
(B) (x, y) → (x, -y)
(C) (x, y) → (-x, y)
(D) (x, y) → (-y, -x)

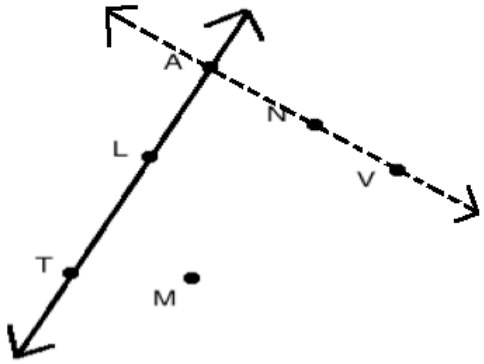


9.) Which of the following explains the symmetry of the image below?

(A) The image has a horizontal line of symmetry
(B) The image has a vertical line of symmetry
(C) The image has both horizontal and vertical lines of symmetry
(D) The image has no symmetry

10.) Which of the following points are **NOT** collinear?

(A) Point A, Point L, Point T
(B) Point T, Point V
(C) Point A, Point T, Point V
(D) Point A, Point N, Point V



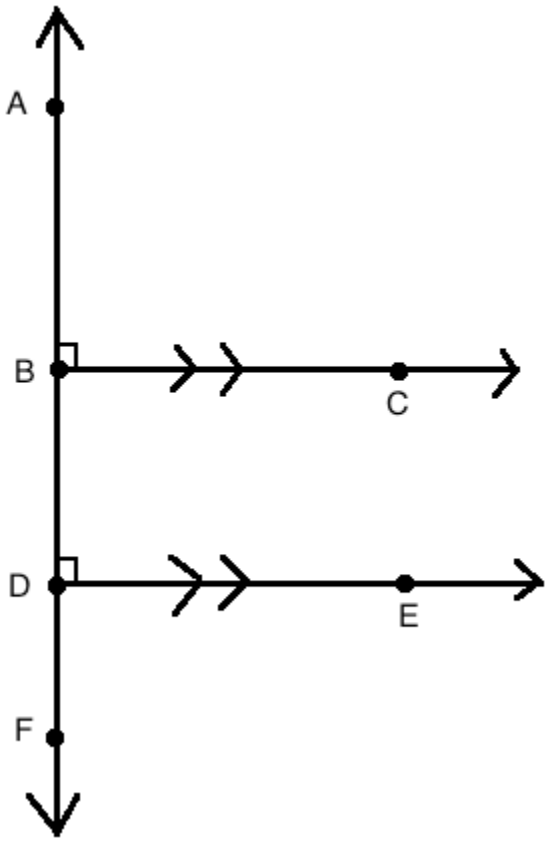
11.) Which statement is true given the picture below?

(A) $\overrightarrow{BC} \perp \overrightarrow{DE}$

(B) $\overrightarrow{BC} \parallel \overrightarrow{DE}$

(C) $\overrightarrow{AB} \parallel \overrightarrow{BC}$

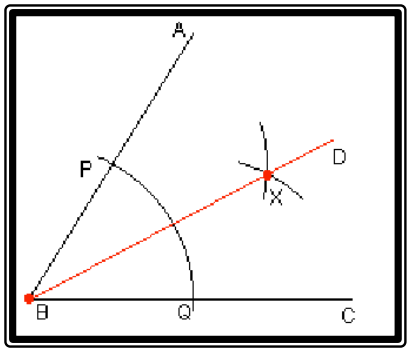
(D) $\overrightarrow{BA} \parallel \overrightarrow{DF}$



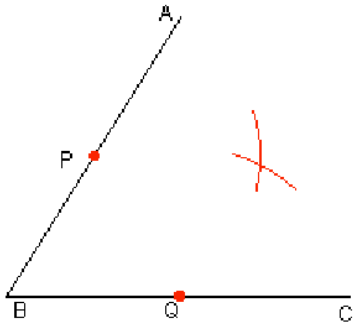
12.) Which of the following best matches the complete definition of a square?

(A) A quadrilateral with both pairs of opposite sides parallel.
(B) A parallelogram with four congruent sides.
(C) A parallelogram with four right angles.
(D) A parallelogram with four congruent sides and four right angles.

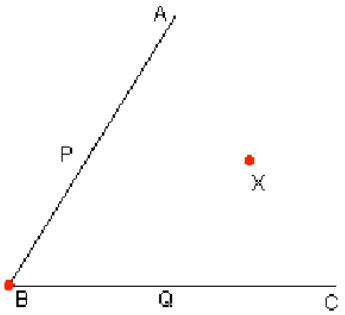
13.) The angle bisector construction is to the right.
What is the first step in constructing an angle bisector?



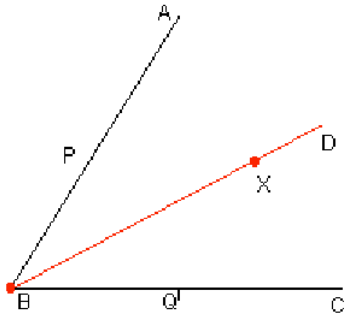
(A)



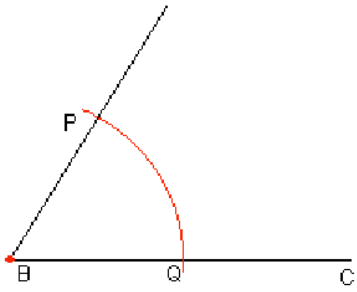
(B)



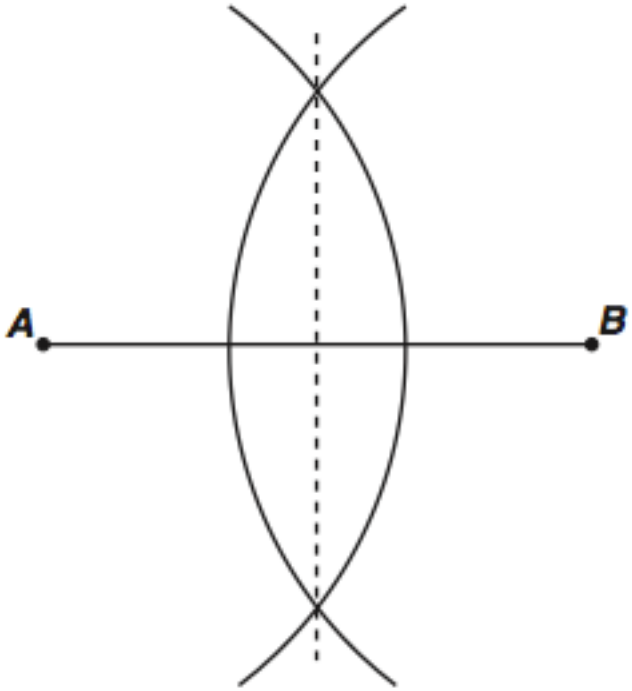
(C)



(D)

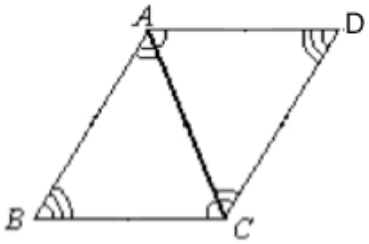


14.) Which construction is shown in the figure below?



(A) An angle bisector
(B) A line parallel to a given line
(C) An angle congruent to a given angle
(D) A perpendicular bisector of a segment

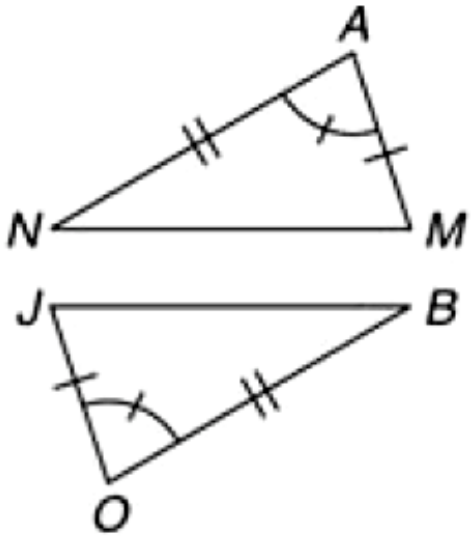
15.) Complete the congruency statement: $\Delta BCA \cong$ ____?____



(A) ΔACD
(B) ΔDAC
(C) ΔCDA
(D) ΔCAD

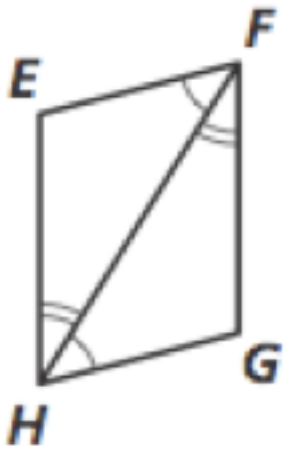
16.) Explain why the two triangles are congruent

(A) SAS
(B) SSA
(C) AAS
(D) SSS



17.) What property helps us prove these triangles congruent by ASA?

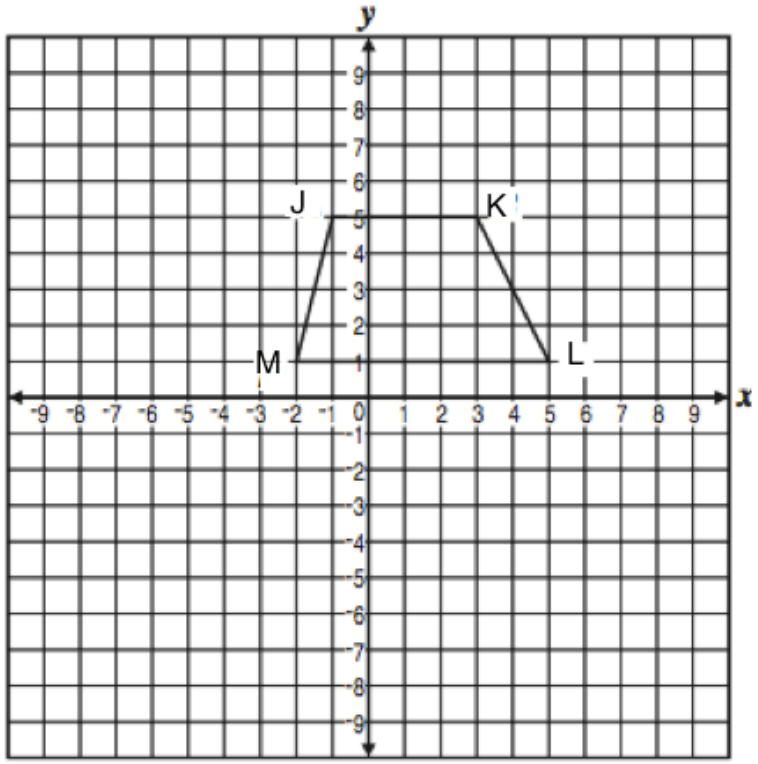
(A) Vertical Angles
(B) Substitution Property
(C) Supplementary Angles
(D) Reflexive Property



18.) Given the transformation rule given below, find the coordinate of L'

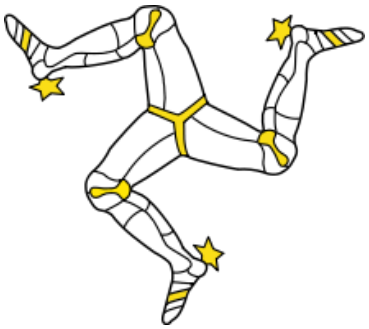
$$(x, y) \rightarrow (x+3, y-4)$$

(A) (1, -3)
(B) (2, 1)
(C) (6, 1)
(D) (8, -3)



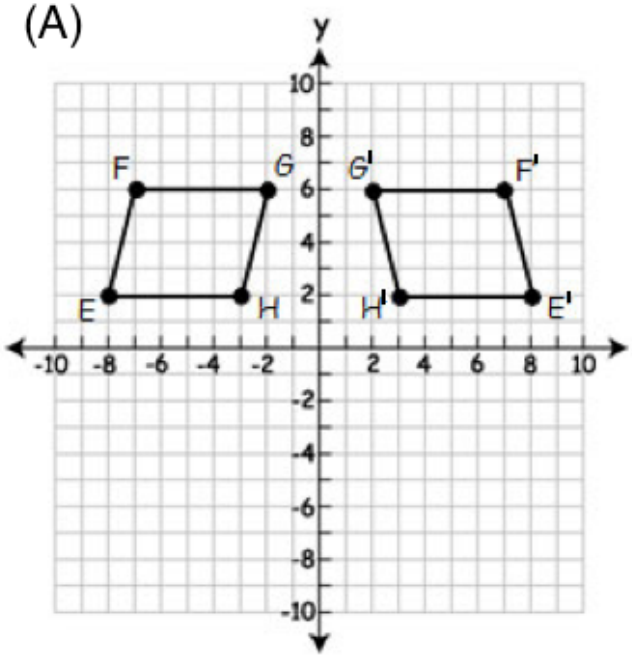
19.) Which of the following is true about the symmetry of this figure?

(A) The order is 3 & the minimal angle of rotation is 120°
(B) The order is 2 & the minimal angle of rotation is 180°
(C) The order is 1 & the minimal angle of rotation is 60°
(D) The order is 6 & the minimal angle of rotation is 30°

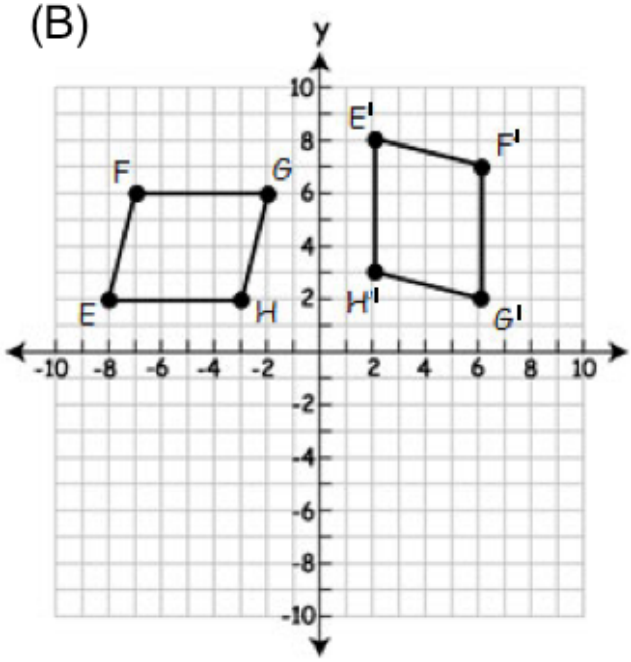


20.) Which of the following depicts a figure that has been rotated 90° clockwise about the origin?

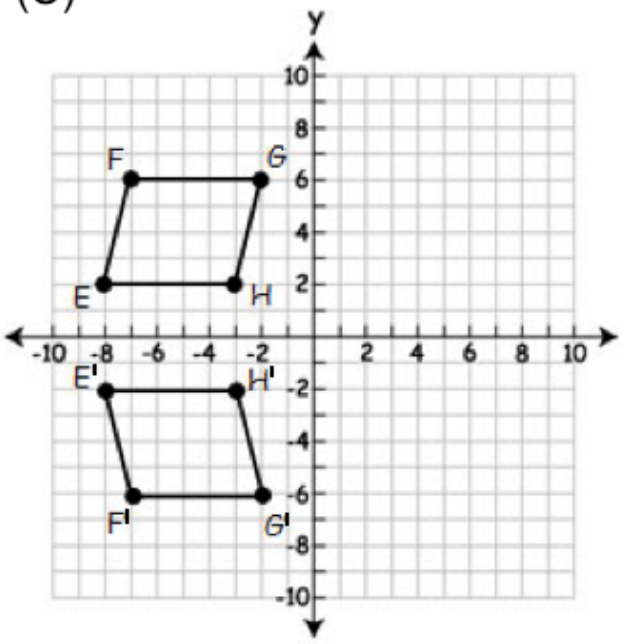
(A)



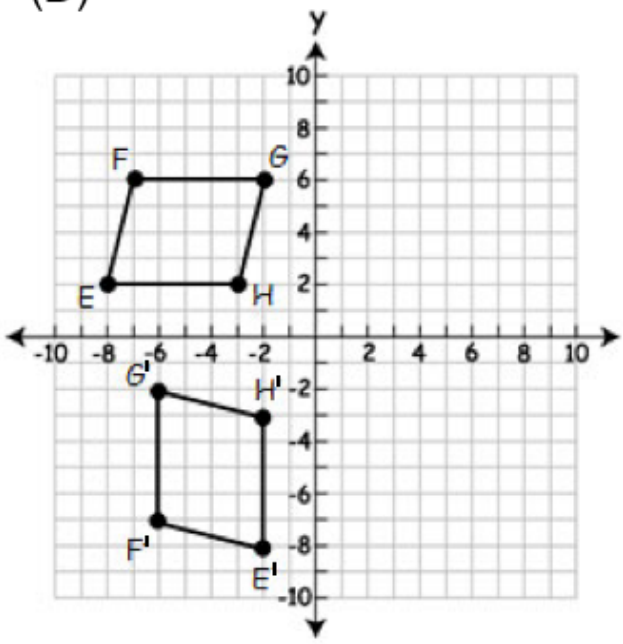
(B)



(C)



(D)



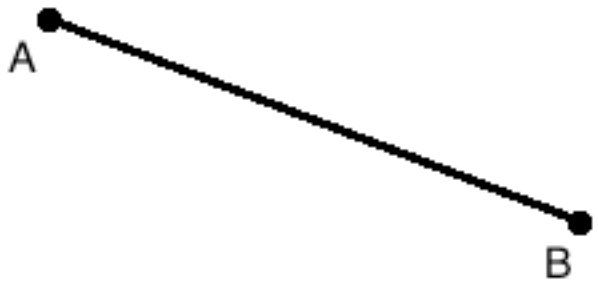
II. Short Answer – 5 points each

Complete each question to the best of your ability. Show or explain how you got your answer for each question.

21.) Use a compass and straight edge to create an equilateral with side length $\overline{AB}$

Follow the five steps below:

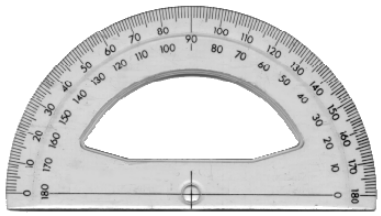
1. Put the tip of the compass on point A.
2. Open the compass so that the pencil tip is on point B.
3. Draw an arc above $\overline{AB}$.
4. Without changing the opening, put the metal tip on point B and draw an arc intersecting the first arc at point C.
5. Draw $\overline{AC}$ and $\overline{BC}$.



22.) Identify the tool or symbol

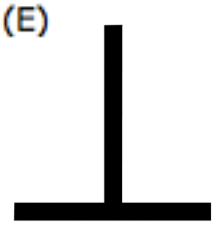
WORD BANK: Congruent, Skew, Protractor, Compass, Perpendicular, Parallel, Coplanar

(A) 

(B) 

(C) 

(D) 

(E) 

Answers:

(A) _____

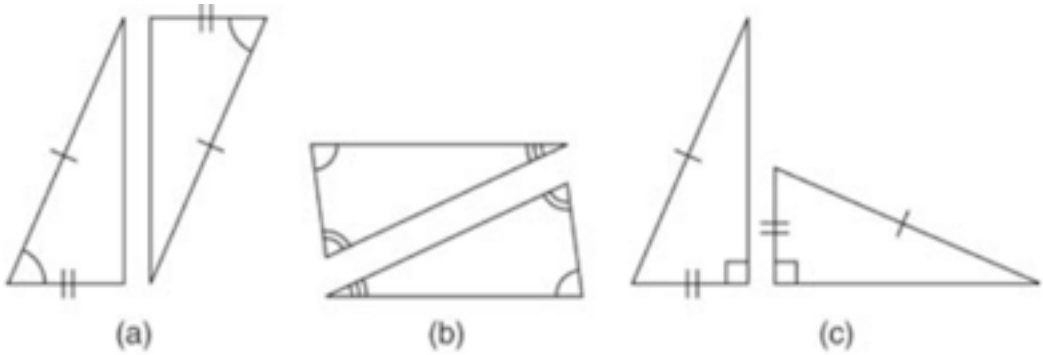
(B) _____

(C) _____

(D) _____

(E) _____

23.) Fill in the chart using the pictures below



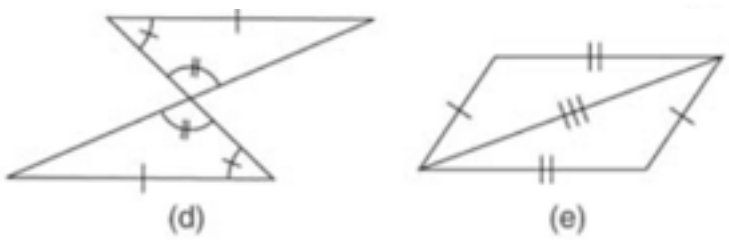
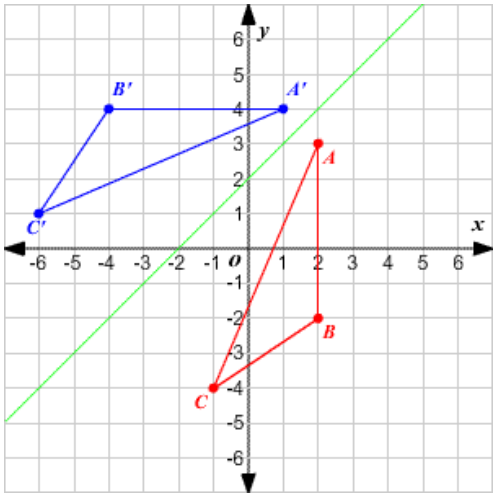


Figure	Reason (SSS, SAS, AAA, H-L, AAS, ASA, OR SSA)	Congruent? (yes or not enough information)
(a)		
(b)		
(c)		
(d)		
(e)		

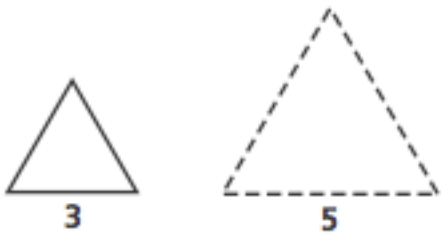
24.) Identify the following transformations below

Word Bank: Dilation, Reflection, Rotation, Translation

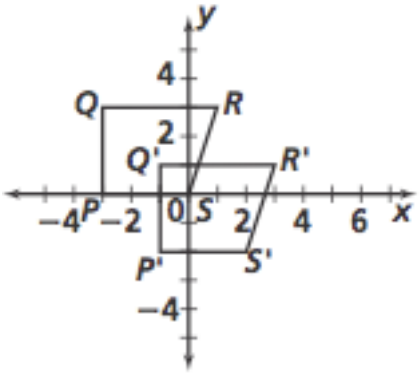
(A)



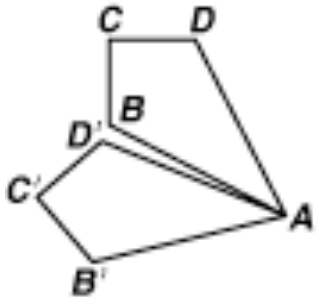
(B)



(C)



(D)



(A)_____

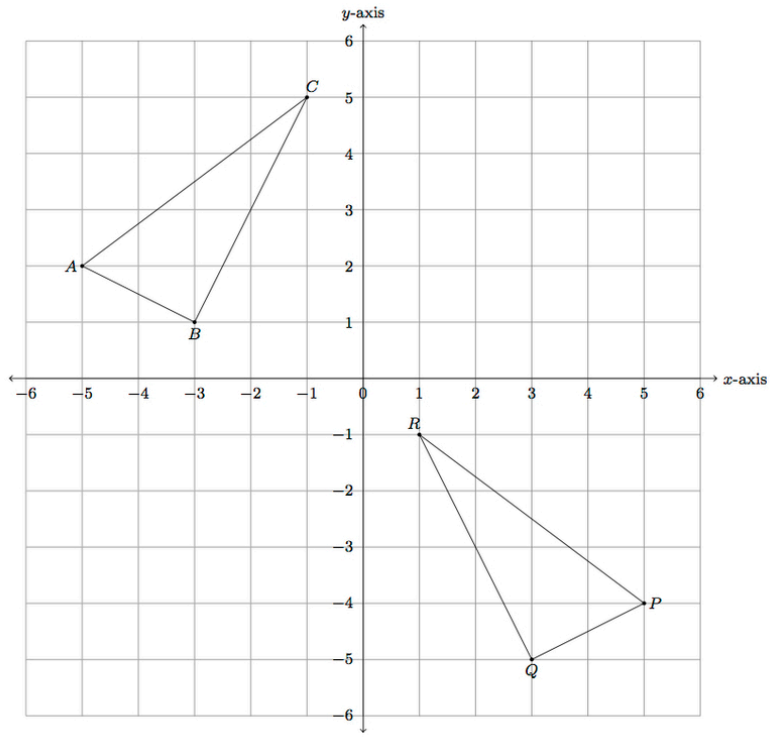
(B)_____

(C)_____

(D) _____

(E) Which of the following transformations above is NOT an isometry? _____

III. Open Response – 20 points total, 10 points each



A. Reflect ∆ABC over the y-axis on the coordinate grid above. Label the image with points A', B', and C' (3 points)

B. What transformation would map ∆A'B'C' to ∆PQR? (Options: Dilation, Translation, Rotation, or Reflection) (3 points)

C. Given your answer to part B, write a rule to explain the transformation from ∆A'B'C' to ∆PQR? (2 points)

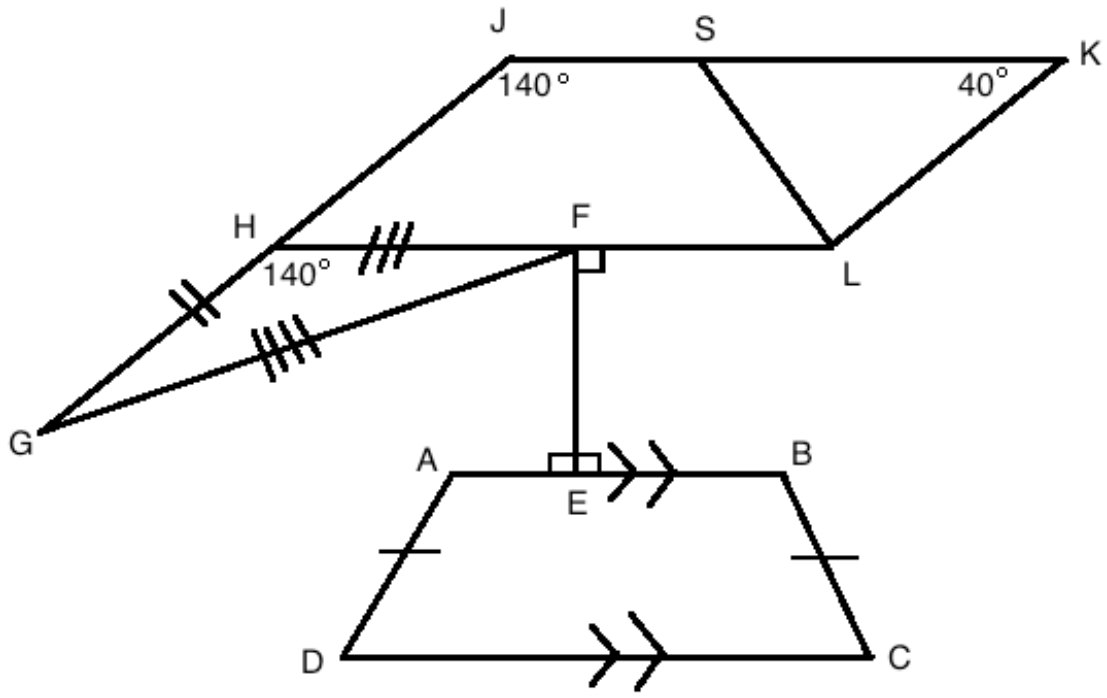
(x,y) → (,)

D. We know ∆ABC ≅ ∆PQR because there is a set of transformations that map ∆ABC to ∆PQR. Fill in the triangle congruency statements below. (2 points)

∆ACB ≅ _____

∆CAB ≅ _____

26). Answer questions A-E using the picture below



(A) Notate two parallel line segments: _____

(B) Notate two perpendicular line segments: _____

(C) Notate two congruent segments: _____

(D) What is the best classification for Quadrilateral ABCD? _____
(example answers: parallelogram, isosceles trapezoid, square, trapezoid, kite, rhombus, rectangle, etc.)

(E) Notate one acute angle: _____
(Note: Choose an angle whose degree measure is given above.)

_____END OF EXAM_____