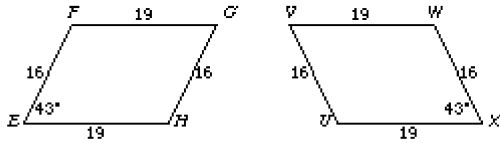


Geometry - Chapter 9 Test SAMPLE

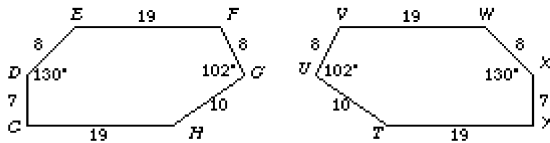
Multiple Choice

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

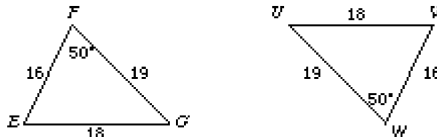
- _____ 1. Which of these transformations are isometries?
 (I) parallelogram $EFGH \rightarrow$ parallelogram $XWVU$



- (II) hexagon $CDEFGH \rightarrow$ hexagon $YXWVUT$



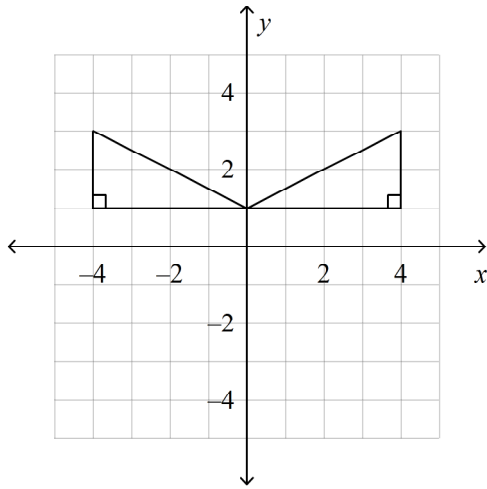
- (III) triangle $EFG \rightarrow$ triangle VWU



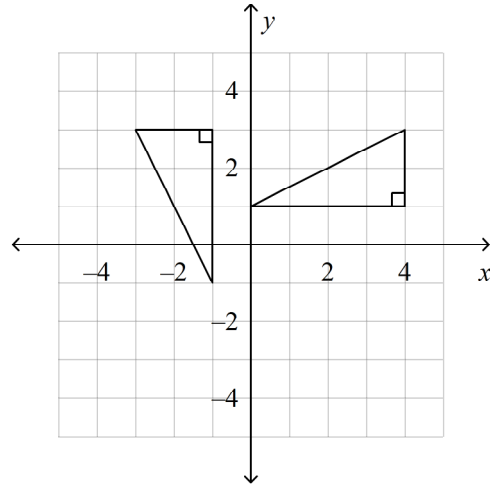
- a. I only b. II and III only c. I and III only d. I, II, and III

_____ 2. Which graph shows a triangle and its reflection image in the x -axis?

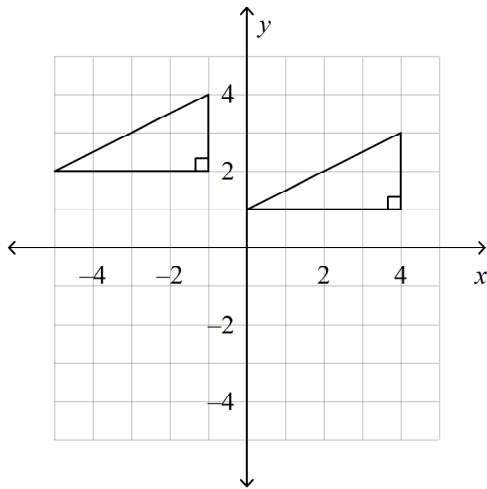
a.



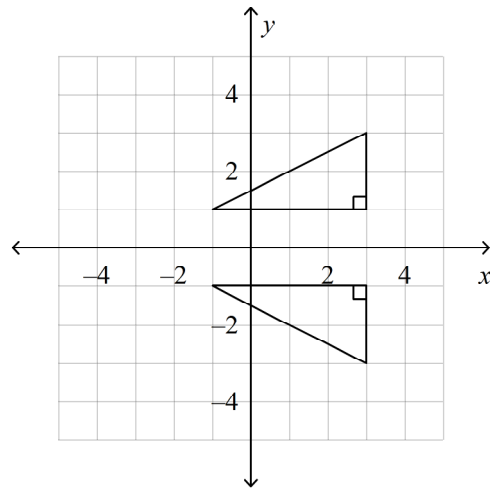
c.



b.



d.



_____ 3. Which letter has rotational symmetry?

a. S

b. D

c. L

d. U

_____ 4. Which letter has at least one line of symmetry?

a. F

b. W

c. Z

d. S

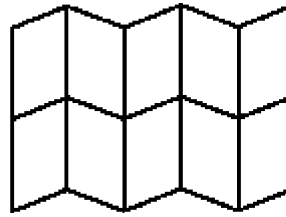
5. Which drawing is the tessellation of the figure?



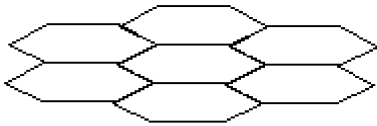
a.



c.



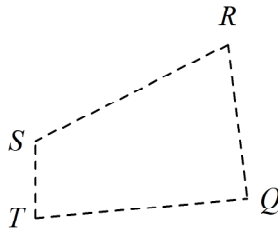
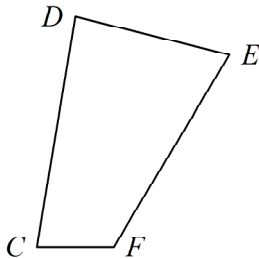
b.



d. none of these

Short Answer

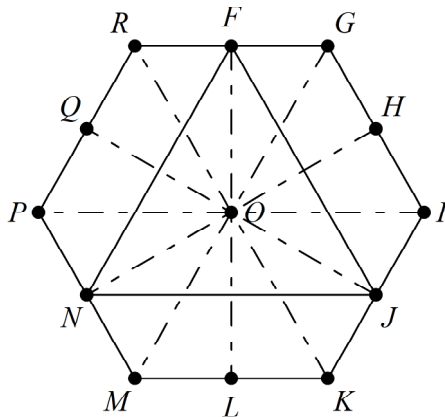
In the diagram, the dashed figure is the image of the solid figure.



6. Name the image of $\angle E$.
7. Name the image of \overline{DE} .
8. The vertices of a triangle are $P(-3, 8)$, $Q(-6, -4)$, and $R(1, 1)$. Name the vertices of the image reflected in the x -axis.
9. The vertices of a triangle are $P(-2, -4)$, $Q(2, -5)$, and $R(-1, -8)$. Name the vertices of the image reflected in the y -axis.
10. The vertices of a triangle are $P(-7, -4)$, $Q(-7, -8)$, and $R(3, -3)$. Name the vertices of the image reflected in the line $y = x$.
11. Find the image of $O(-1, -3)$ after two reflections, first in the line $y = -2$, and then in the line $x = -2$.
12. Use an ordered pair to describe the translation that is 6 units to the left and 4 units up.

13. Use an ordered pair to describe the translation that is 7 units to the left and 1 units down.
14. Use an ordered pair to describe the translation that is 8 units to the right and 2 units up.
15. Use an ordered pair to describe the translation that is 9 units to the right and 6 units down.
16. Write a rule to describe the transformation that is a reflection in the x -axis.
17. Write a rule to describe the transformation that is a reflection in the y -axis.

The hexagon $GIKMPR$ and $\triangle FJN$ are regular. The dashed line segments form 30° angles.



18. Find the angle of rotation about O that maps Q to F .
19. Find the angle of rotation about O that maps \overline{JK} to \overline{FG} .
20. Find the image of point P after a rotation of 240° about point M .
21. Find the image of \overline{OQ} after a rotation of 240° about point O .
22. $P \rightarrow P'(-5, -8)$ for the glide vector $\langle 3, 5 \rangle$ and the reflection line $y = -x$. Find the coordinates of P .
23. The right figure is an isometry of the left figure. Tell whether their orientations are the same or opposite. Then classify the isometry.

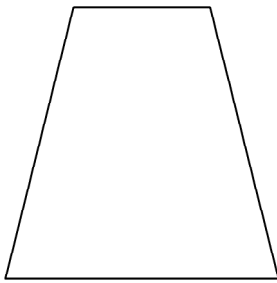


Name: _____

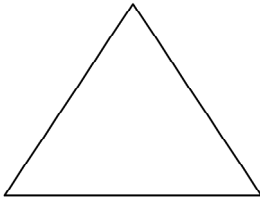
ID: A

Name the type of symmetry for the figure.

24.



25. How many lines of symmetry does the figure have?



26. A blueprint for a house has a scale of 1 : 35. A wall in the blueprint is 3 in. What is the length of the actual wall?

Geometry - Chapter 9 Test SAMPLE Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: L3 REF: 9-1 Translations
OBJ: 9-1.1 Identifying isometries STA: CA GEOM 22.0
TOP: 9-1 Example 1 KEY: transformation | isometry
2. ANS: D PTS: 1 DIF: L3 REF: 9-2 Reflections
OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
TOP: 9-2 Example 2 KEY: coordinate plane | reflection
3. ANS: A PTS: 1 DIF: L2 REF: 9-4 Symmetry
OBJ: 9-4.1 Identifying types of symmetry in figures TOP: 9-4 Example 3
KEY: rotational symmetry | symmetry
4. ANS: B PTS: 1 DIF: L2 REF: 9-4 Symmetry
OBJ: 9-4.1 Identifying types of symmetry in figures TOP: 9-4 Example 3
KEY: rotational symmetry | symmetry
5. ANS: B PTS: 1 DIF: L2 REF: 9-7 Tessellations
OBJ: 9-7.1 Identifying transformations in tessellations STA: CA GEOM 22.0
TOP: 9-7 Example 1 KEY: tessellation | tiling

SHORT ANSWER

6. ANS:
 $\angle R$

PTS: 1 DIF: L2 REF: 9-1 Translations
OBJ: 9-1.1 Identifying isometries STA: CA GEOM 22.0
TOP: 9-1 Example 2 KEY: image-preimage | corresponding parts
7. ANS:
 \overline{QR}

PTS: 1 DIF: L2 REF: 9-1 Translations
OBJ: 9-1.1 Identifying isometries STA: CA GEOM 22.0
TOP: 9-1 Example 2 KEY: image-preimage | corresponding parts
8. ANS:
 $P'(-3, -8), Q'(-6, 4), R'(1, -1)$

PTS: 1 DIF: L2 REF: 9-2 Reflections
OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
TOP: 9-2 Example 1 KEY: image-preimage | corresponding parts | coordinate plane | reflection

9. ANS:

$$P'(2, -4), Q'(-2, -5), R'(1, -8)$$

PTS: 1 DIF: L2 REF: 9-2 Reflections
 OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
 TOP: 9-2 Example 1
 KEY: image-preimage | corresponding parts | coordinate plane | reflection

10. ANS:

$$P'(-4, -7), Q'(-8, -7), R'(-3, 3)$$

PTS: 1 DIF: L2 REF: 9-2 Reflections
 OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
 TOP: 9-2 Example 1
 KEY: image-preimage | corresponding parts | coordinate plane | reflection

11. ANS:

$$(-3, -1)$$

PTS: 1 DIF: L3 REF: 9-2 Reflections
 OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
 TOP: 9-2 Example 1 KEY: image-preimage | coordinate plane | reflection

12. ANS:

$$\langle -6, 4 \rangle$$

PTS: 1 DIF: L2 REF: 9-1 Translations
 OBJ: 9-1.2 Translations using vectors STA: CA GEOM 22.0
 TOP: 9-1 Example 3 KEY: translation | vector

13. ANS:

$$\langle -7, -1 \rangle$$

PTS: 1 DIF: L2 REF: 9-1 Translations
 OBJ: 9-1.2 Translations using vectors STA: CA GEOM 22.0
 TOP: 9-1 Example 3 KEY: translation | vector

14. ANS:

$$\langle 8, 2 \rangle$$

PTS: 1 DIF: L2 REF: 9-1 Translations
 OBJ: 9-1.2 Translations using vectors STA: CA GEOM 22.0
 TOP: 9-1 Example 3 KEY: translation | vector

15. ANS:

$$\langle 9, -6 \rangle$$

PTS: 1 DIF: L2 REF: 9-1 Translations
 OBJ: 9-1.2 Translations using vectors STA: CA GEOM 22.0
 TOP: 9-1 Example 3 KEY: translation | vector

16. ANS:
 $(x, y) \rightarrow (x, -y)$
- PTS: 1 DIF: L2 REF: 9-2 Reflections
 OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
 TOP: 9-2 Example 1
 KEY: translation | transformation | coordinate plane | translation rule
17. ANS:
 $(x, y) \rightarrow (-x, y)$
- PTS: 1 DIF: L2 REF: 9-2 Reflections
 OBJ: 9-2.1 Finding reflection images STA: CA GEOM 22.0
 TOP: 9-2 Example 1
 KEY: translation | transformation | coordinate plane | translation rule
18. ANS:
 300°
- PTS: 1 DIF: L2 REF: 9-3 Rotations
 OBJ: 9-3.1 Drawing and identifying rotation images STA: CA GEOM 22.0
 TOP: 9-3 Example 3 KEY: rotation | degree of rotation | image
19. ANS:
 120°
- PTS: 1 DIF: L2 REF: 9-3 Rotations
 OBJ: 9-3.1 Drawing and identifying rotation images STA: CA GEOM 22.0
 TOP: 9-3 Example 3 KEY: rotation | degree of rotation | image
20. ANS:
 K
- PTS: 1 DIF: L2 REF: 9-3 Rotations
 OBJ: 9-3.1 Drawing and identifying rotation images STA: CA GEOM 22.0
 TOP: 9-3 Example 2 KEY: rotation | degree of rotation | image
21. ANS:
 \overline{OH}
- PTS: 1 DIF: L2 REF: 9-3 Rotations
 OBJ: 9-3.1 Drawing and identifying rotation images STA: CA GEOM 22.0
 TOP: 9-3 Example 3 KEY: rotation | degree of rotation | image
22. ANS:
 $(5, 0)$
- PTS: 1 DIF: L4 REF: 9-6 Compositions of Reflections
 OBJ: 9-6.2 Glide reflections STA: CA GEOM 22.0
 KEY: algebra | composition of transformations | coordinate plane | image-preimage | glide reflection | image | line of reflection | reflection line | glide vector

23. ANS:
opposite orientation; reflection
- PTS: 1 DIF: L2 REF: 9-6 Compositions of Reflections
OBJ: 9-6.2 Glide reflections STA: CA GEOM 22.0
TOP: 9-6 Example 5 KEY: reflection | orientation | isometry
24. ANS:
reflectional
- PTS: 1 DIF: L2 REF: 9-4 Symmetry
OBJ: 9-4.1 Identifying types of symmetry in figures TOP: 9-4 Example 2
KEY: symmetry | rotational symmetry | reflectional symmetry
25. ANS:
3
- PTS: 1 DIF: L2 REF: 9-4 Symmetry
OBJ: 9-4.1 Identifying types of symmetry in figures TOP: 9-4 Example 1
KEY: symmetry | line symmetry
26. ANS:
8.75 feet
- PTS: 1 DIF: L2 REF: 9-5 Dilations
OBJ: 9-5.1 Locating dilation images TOP: 9-5 Example 2
KEY: dilation | enlargement | scale factor | word problem