Review Sheet (Midterm - Regular Geometry)

1. One endpoint of a segment has coordinates $(16, 3)$. If the coordinates of the midpoint are $(9, 6)$, what are the coordinates of the other endpoint?

   A. $(12.5, 4.5)$ B. $(2, 9)$

   C. $(9, 3)$ D. $(25, 9)$

2. In a circle, diameter $\overline{AB}$ is drawn. The coordinates of A are $(3, -4)$ and the coordinates of the center of the circle are $(1, 1)$. What are the coordinates of B?

   A. $(-1, 6)$ B. $(2, -\frac{3}{2})$

   C. $(1, -6)$ D. $(1, -\frac{5}{2})$

3. A circle has center $(3, 5)$ and diameter $\overline{AB}$. The coordinates of A are $(-4, 6)$. What are the coordinates of B?

   A. $(-\frac{1}{2}, 4)$ B. $(10, 4)$

   C. $(10, 1)$ D. $(-3\frac{1}{2}, 5\frac{1}{2})$

4. If the endpoints of a diameter of a circle are $(2, -1)$ and $(4, 0)$, what are the coordinates of the center of the circle?

   A. $(6, -1)$ B. $(3, -\frac{1}{2})$

   C. $(3, \frac{1}{2})$ D. $(2, -1)$

5. What are the coordinates of the center of a circle if the endpoints of its diameter are $A(8, -4)$ and $B(-3, 2)$?

   A. $(2.5, 1)$ B. $(2.5, -1)$
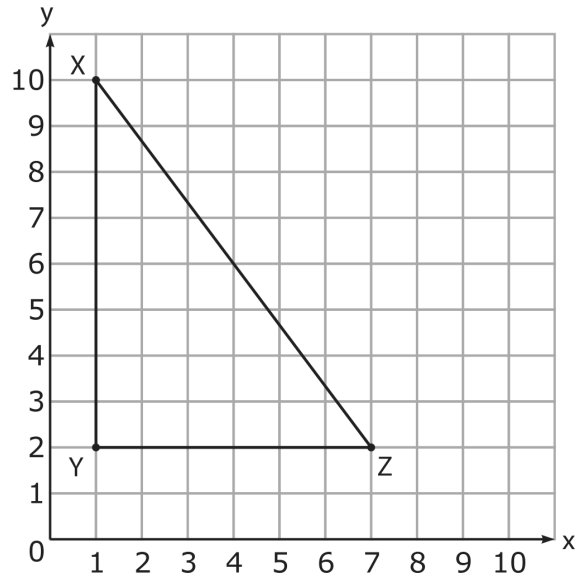
   C. $(5.5, -3)$ D. $(5.5, 3)$

6. If the coordinates of A are $(3, 4)$ and the coordinates of B are $(-3, -4)$, then the length of $\overline{AB}$ is

   A. 5   B. 10   C. 20   D. 100

7. What is the distance between points $(6, -9)$ and $(-3, 4)$?

   A. $\sqrt{34}$ B. $\sqrt{106}$ C. $\sqrt{178}$ D. $\sqrt{250}$
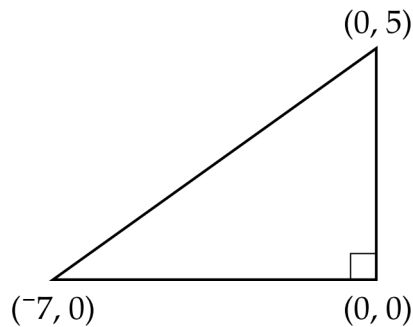
8. Triangle XYZ is shown below.

   What is the perimeter of triangle XYZ?

   A. 24 units   B. 25 units   C. 26 units

9. Look at the triangle below.


   What is the perimeter of the triangle? Round the answer to the nearest tenth of a unit.

   A. 9.3 units   B. 12.0 units

   C. 20.6 units   D. 86.0 units

10. The distance between coordinates $D(-4, -3)$ and $E(5, 9)$ is

   A. $\sqrt{37}$ B. $\sqrt{63}$ C. 12   D. 15

11. What is the slope of a line that is perpendicular to the line whose equation is $y = 3x + 5$?

   A. $-\frac{1}{3}$ B. -3 C. 3   D. $\frac{1}{5}$

12. Lines ℓ and m are perpendicular. The slope of ℓ is $\frac{3}{5}$. What is the slope of m?

   A. $-\frac{3}{5}$ B. $-\frac{5}{3}$ C. $\frac{3}{5}$ D. $\frac{5}{3}$

13. What is the slope of a line that is perpendicular to the line whose equation is $y - 2x = 5$?

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

14. Which statement describes the lines whose equations are $y = \frac{1}{3}x + 12$ and $6y = 2x + 6$?

   A. They are segments.

   B. They are perpendicular to each other.

   C. They intersect each other.

   D. They are parallel to each other.

15. A student wrote the following equations:

$$3y + 6 = 2x$$
$$2y - 3x = 6$$

   The lines represented by these equations are

   A. parallel

   B. the same line

   C. perpendicular

   D. intersecting, but *not* perpendicular

16. The equation of a line is $3y + 2x = 12$. What is the slope of the line perpendicular to the given line?

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

17. Point P is on the directed line segment from point $X(-6, -2)$ to point $Y(6, 7)$ and divides the segment in the ratio $1:5$. What are the coordinates of point P?

   A. $(4, 5\frac{1}{2})$ B. $(-\frac{1}{2}, -4)$

   C. $(-4\frac{1}{2}, 0)$ D. $(-4, -\frac{1}{2})$

18. A three-inch line segment is dilated by a scale factor of 6 and centered at its midpoint. What is the length of its image?

   A. 9 inches   B. 2 inches

   C. 15 inches   D. 18 inches

19. Which transformation of $\overline{OA}$ would result in an image parallel to $\overline{OA}$?
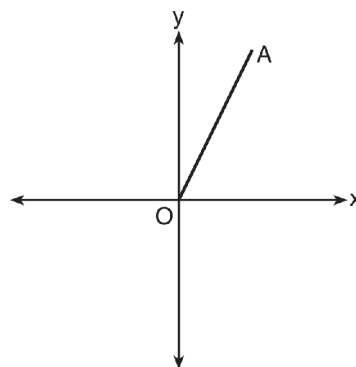
   A. a translation of two units down

   B. a reflection over the *x*-axis

   C. a reflection over the *y*-axis

   D. a clockwise rotation of $90°$ about the origin

20. In the diagram below, which single transformation was used to map triangle *A* onto triangle *B*?
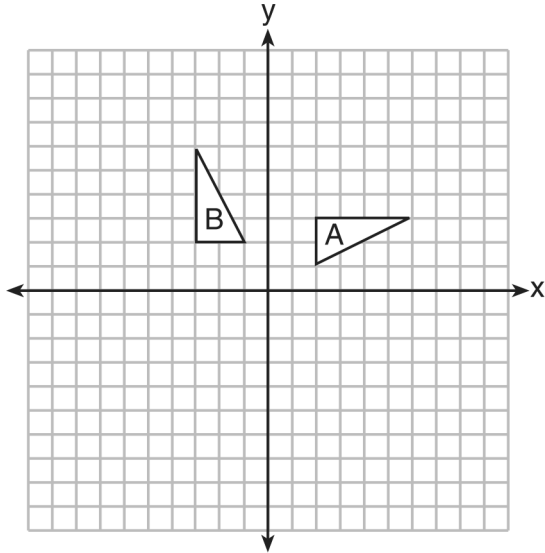

   A. line reflection
   B. rotation
   C. dilation
   D. translation

21. The vertices of $\triangle JKL$ have coordinates $J(5, 1)$, $K(-2, -3)$, and $L(-4, 1)$. Under which transformation is the image $\triangle J'K'L'$ *not* congruent to $\triangle JKL$?

   A. a translation of two units to the right and two units down
   B. a counterclockwise rotation of 180 degrees around the origin
   C. a reflection over the *x*-axis
   D. a dilation with a scale factor of 2 and centered at the origin

22. In the diagram below, congruent figures 1, 2, and 3 are drawn.
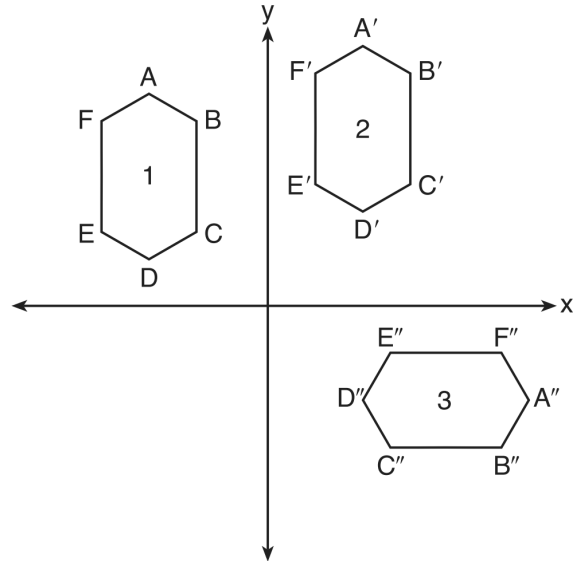
Which sequence of transformations maps figure 1 onto figure 2 and then figure 2 onto figure 3?

   A. a reflection followed by a translation
   B. a rotation followed by a translation
   C. a translation followed by a reflection
   D. a translation followed by a rotation

23. Which regular polygon has a minimum rotation of $45°$ to carry the polygon onto itself?

   A. octagon
   B. decagon
   C. hexagon
   D. pentagon

24. Triangle *JTM* is shown on the graph below.
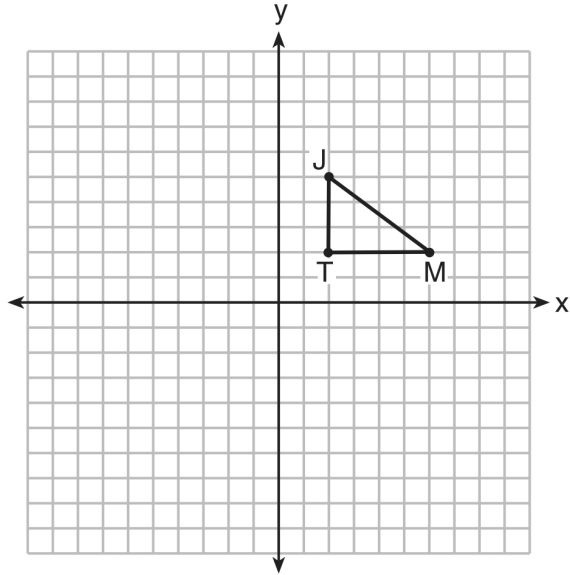
Which transformation would result in an image that is *not* congruent to $\triangle JTM$?

A. $r_{y=x}$ B. $R_{90°}$ C. $T_{0,-3}$ D. D_2

25. A triangle has vertices $(0, 3)$, $(0, -3)$, $(4, 0)$.
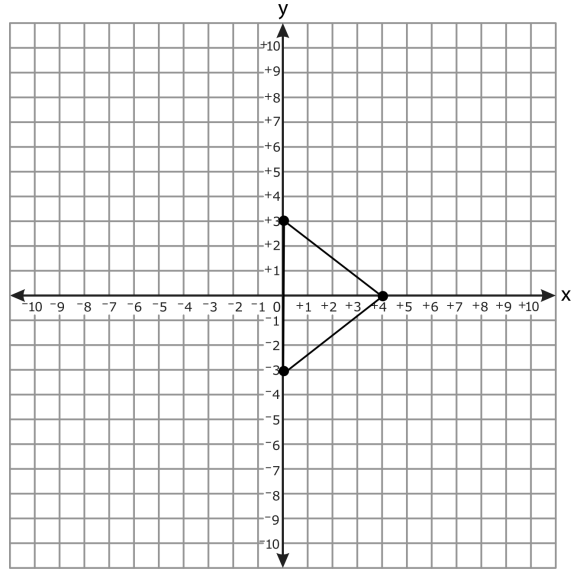
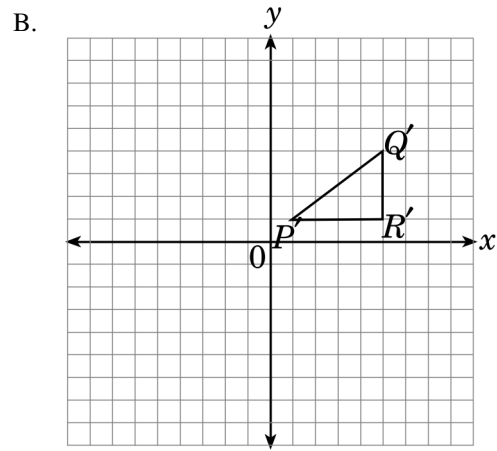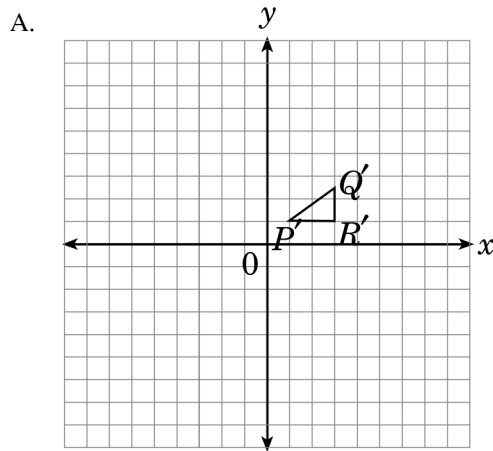What is the perimeter of the triangle?

A. 16 units   B. 12 units   C. 10 units

Review Sheet (Midterm - Regular Geometry)

26. If quadrilateral *ABCD* is dilated with a scale factor of 3, which of the following would be the result?

$$(x, y) \longrightarrow (3x, 3y)$$

A.

B.

C.

D.
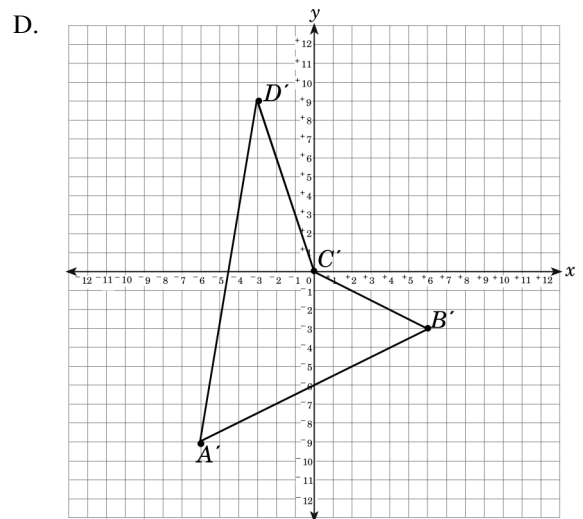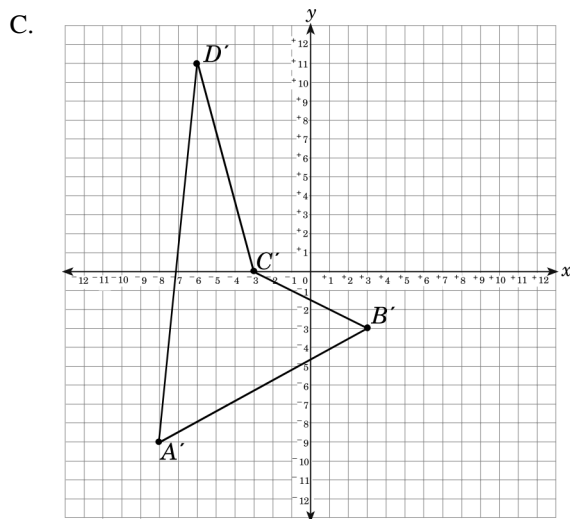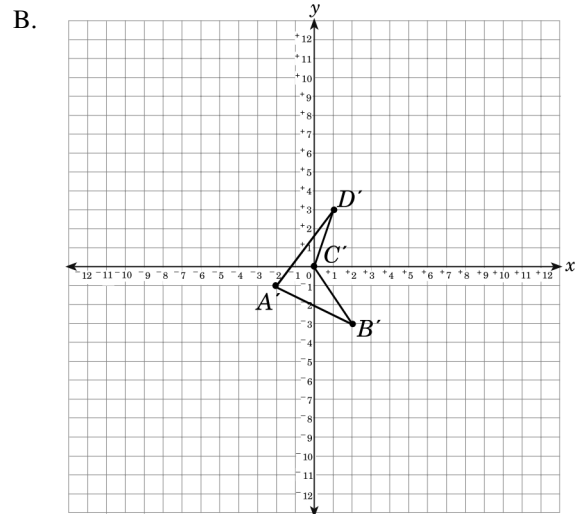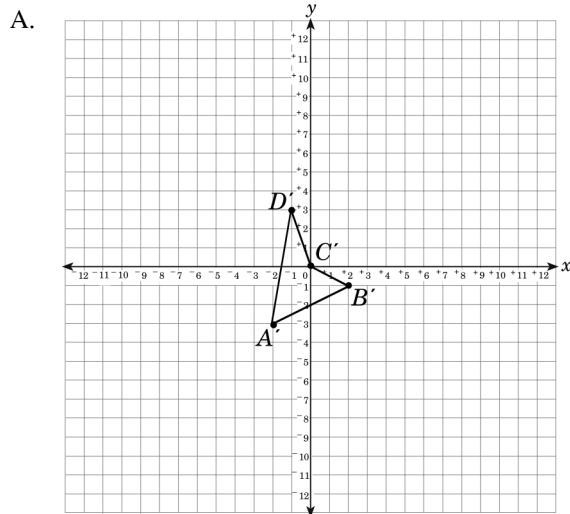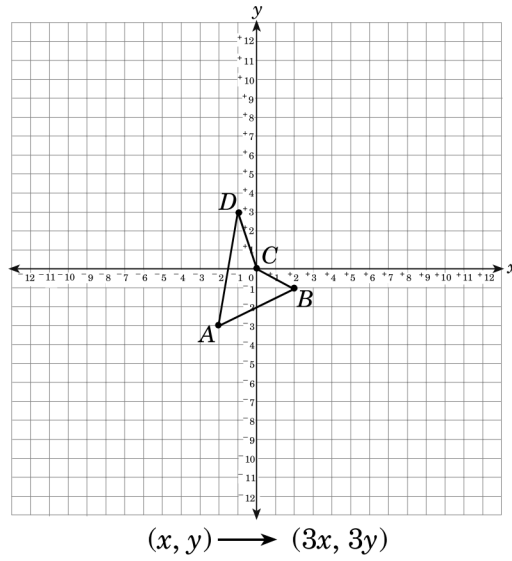
27. Which choice illustrates a dilation of $\triangle PQR$ with a scale factor of $\frac{1}{2}$?

A.

B.

C.

D.

Review Sheet (Midterm - Regular Geometry)
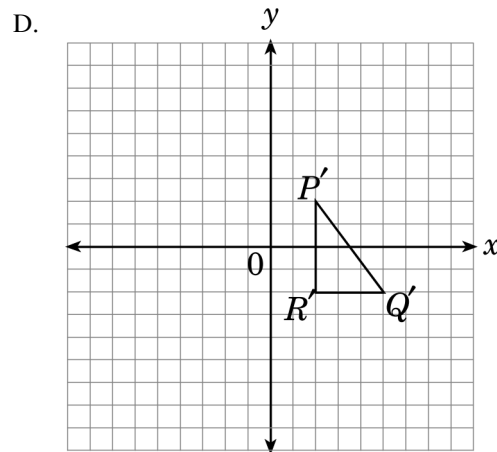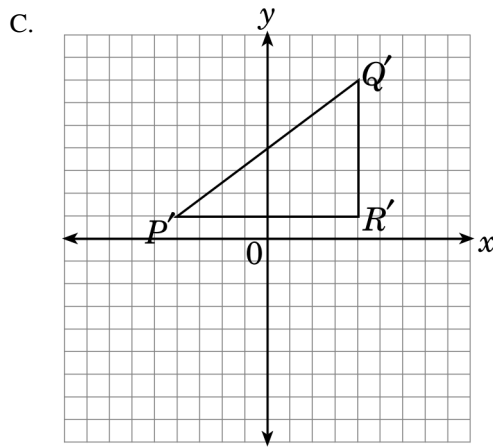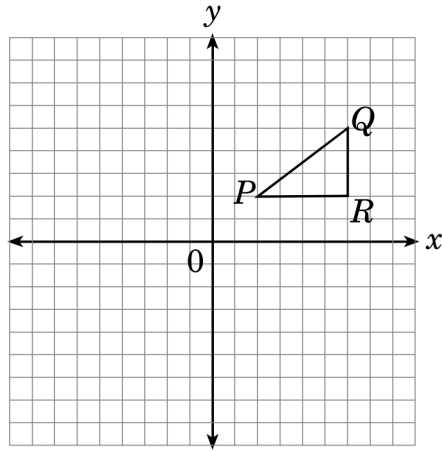
28. A triangle has the following vertices: $(-1, 1)$, $(6, -2)$, and $(3, 5)$. If the triangle undergoes a dilation with a scale factor of 3, what will be the vertices of the image?

A. $(-3, 3)$, $(18, -6)$, $(9, 15)$

B. $(3, 3)$, $(18, 6)$, $(9, 15)$

C. $(-3, 3)$, $(18, 6)$, $(9, 15)$

D. $(3, 3)$, $(18, -6)$, $(9, 15)$

29. A point has the coordinates $(4, 8)$. The point will be dilated by a scale factor of 2. What will be the coordinates of the image point?

A. $(6, 8)$ B. $(8, 16)$ C. $(24, 28)$

30. Jack drew the figure shown on a grid.
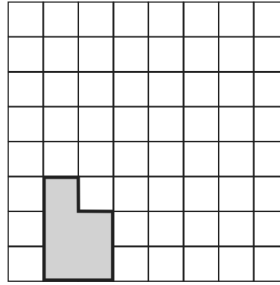
Which grid shows a dilation of this figure with a scale factor of 2?

A.

B.

C.

D.
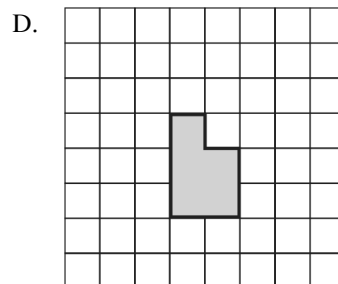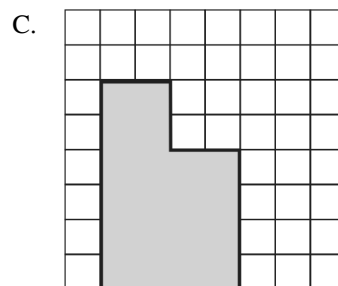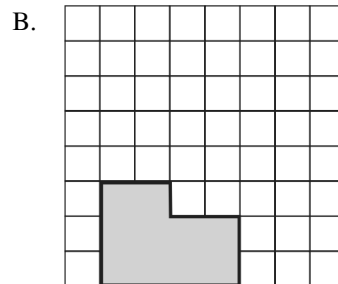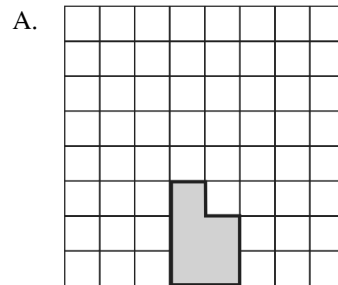
31. Rectangle STUV is shown on the grid.
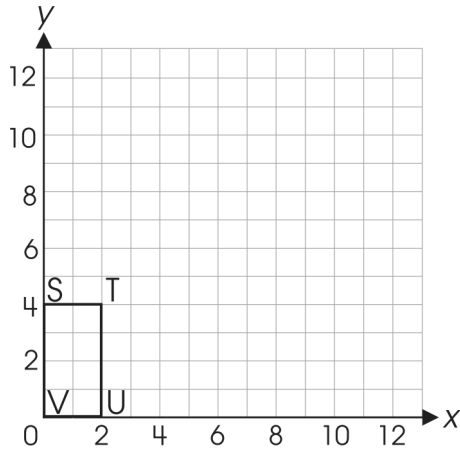
What will be the new ordered pair of point T after the rectangle is dilated about the origin by a scale factor of 3?
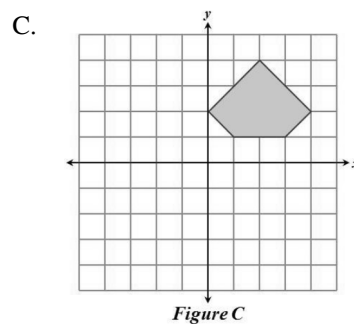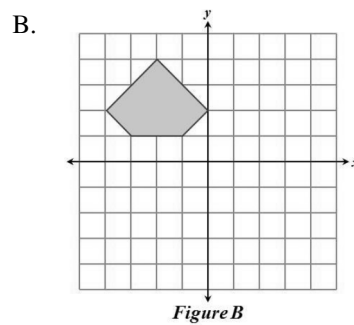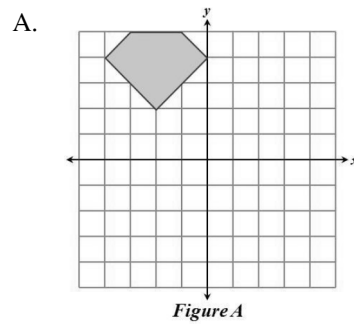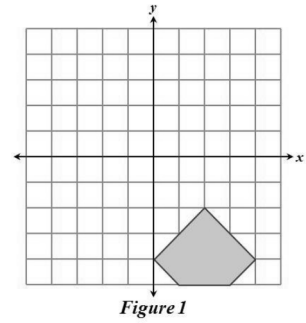
A. $(3, 4)$ B. $(5, 7)$

C. $(4, 8)$ D. $(6, 12)$

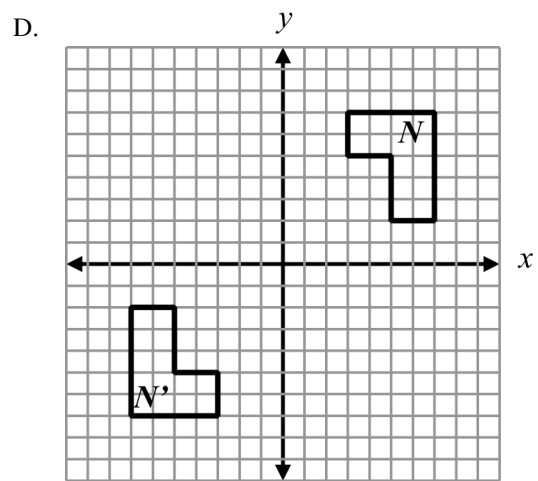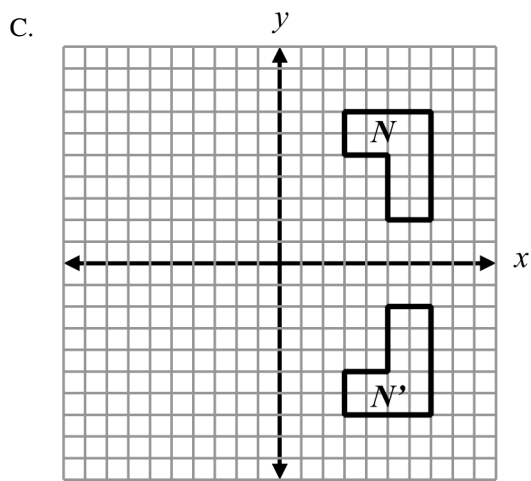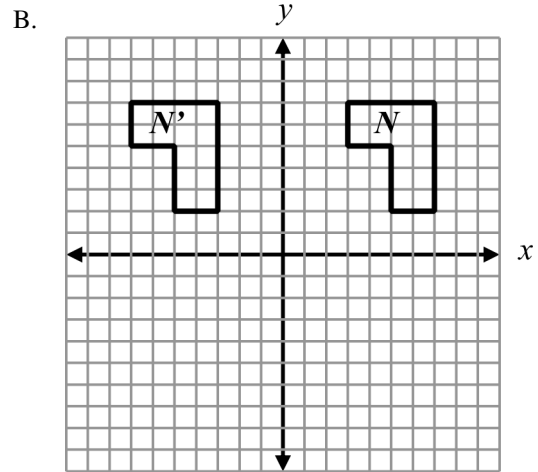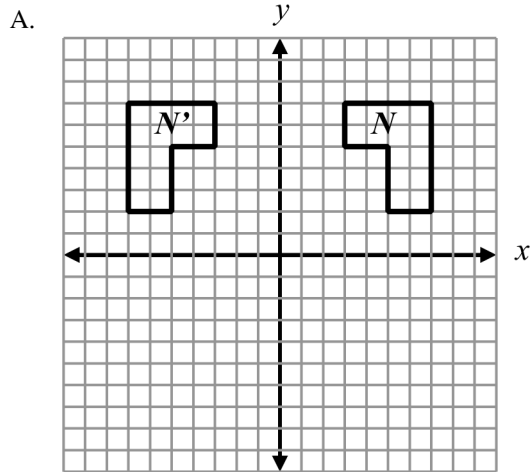32. Use this graph to answer the question.
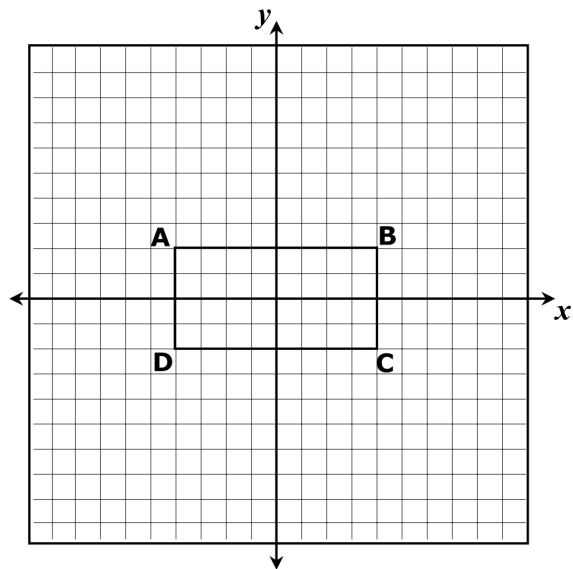
A dilation of scale factor 2 is applied to rectangle ABCD, centered at the origin. What are the coordinates of B'?

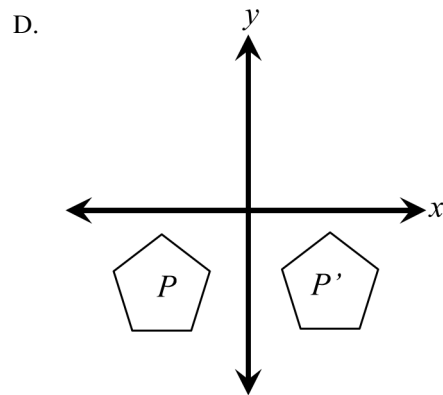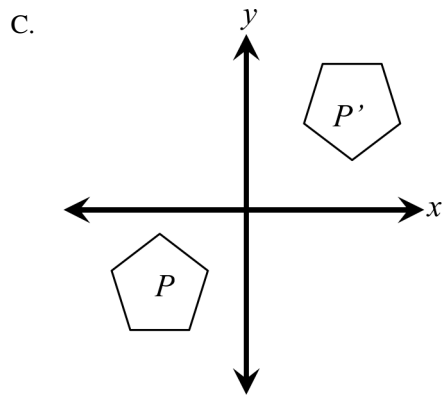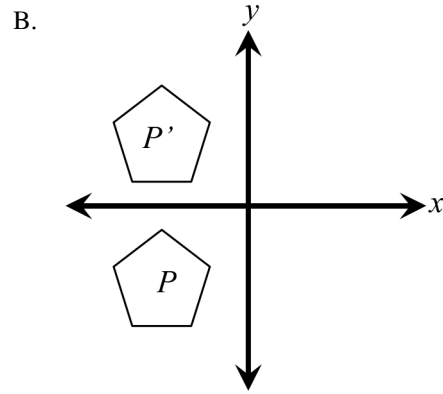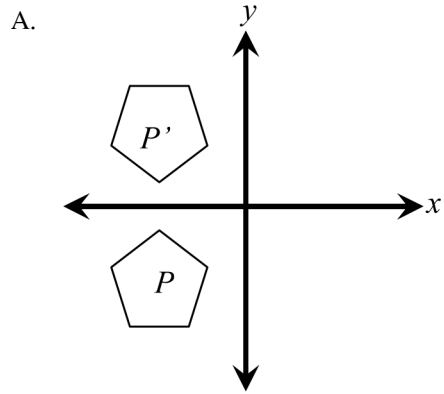A. $(1, 2)$ B. $(2, 1)$ C. $(4, 8)$ D. $(8, 4)$

33. Figure 1 is reflected about the x–axis and then translated four units left. Which is the new figure?

Figure 1

A.

Figure A

B.

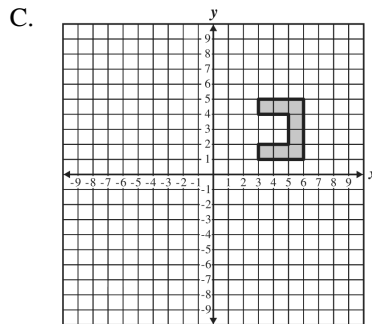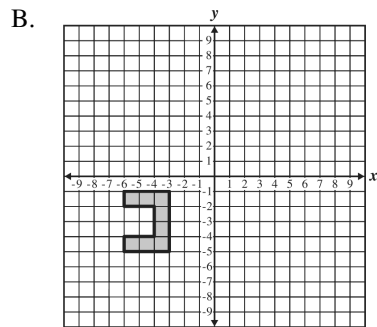Figure B

C.

Figure C

D.
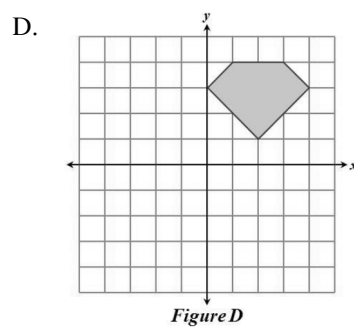
Figure D

34. Which of the following is a single reflection of figure *N* over the *y*-axis to form *N'*?

A.

B.

C.

D.

Review Sheet (Midterm - Regular Geometry)

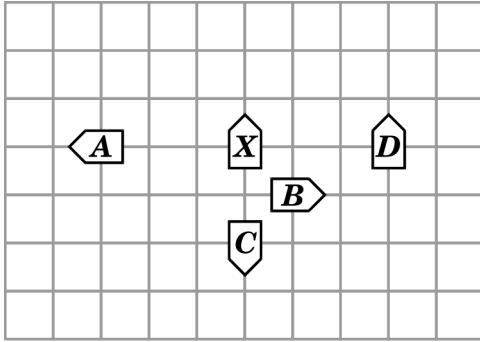35. Which figure is a reflection of figure P in respect to the x-axis?

A.

B.

C.

D.

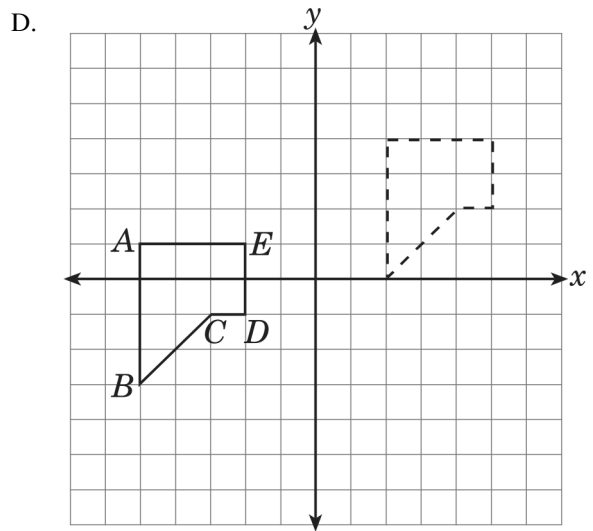36. Which graph shows the figure below reflected across the *y*-axis?
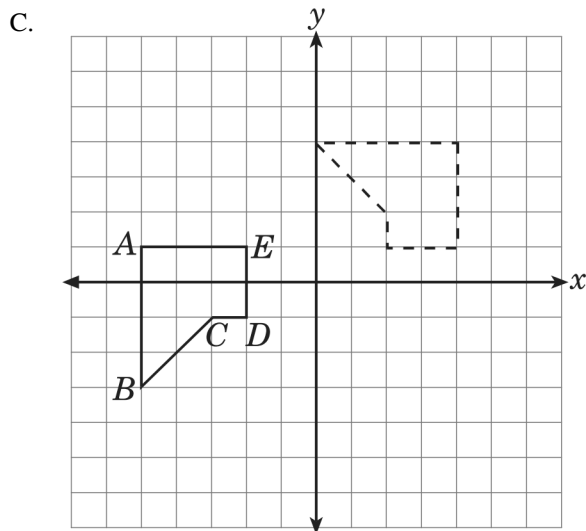
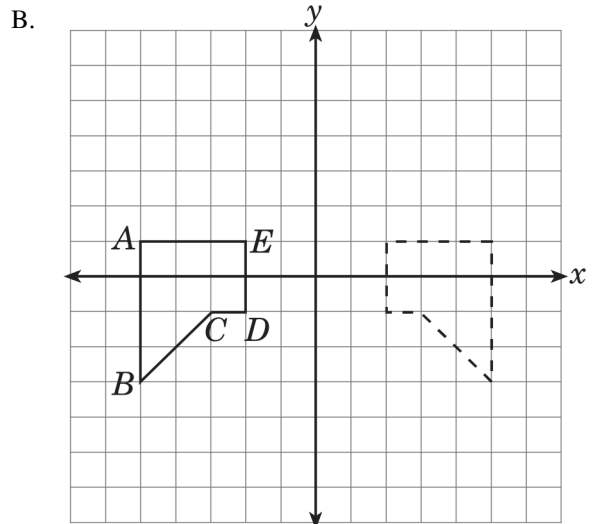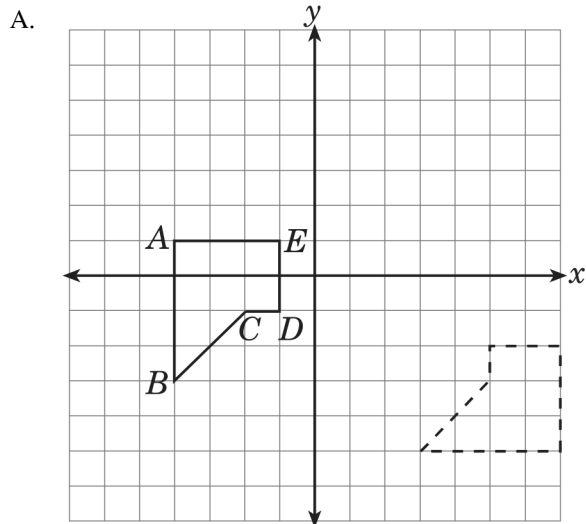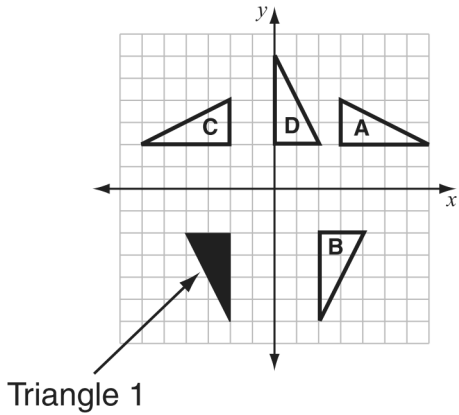

A.

B.

C.

D.
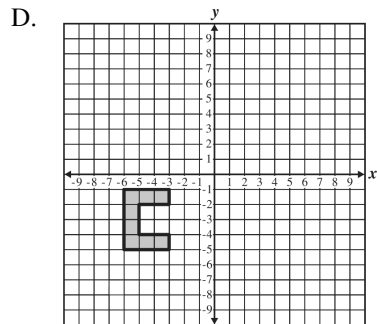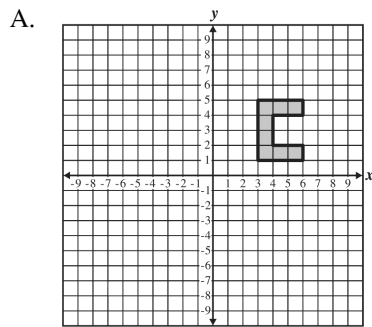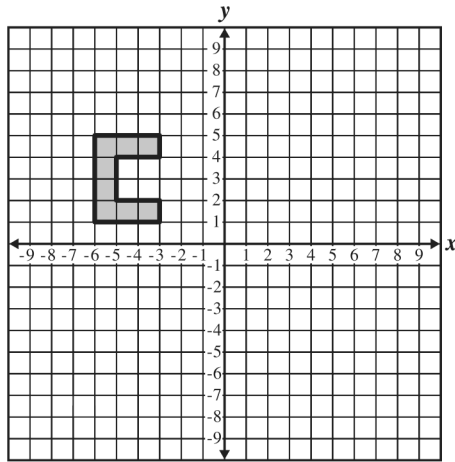
37. Which house shows only a translation of house *X*?

A. house *A*   B. house *B*

C. house *C*   D. house *D*

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38. Which picture shows only a translation of polygon *ABCDE*?

A.

B.

C.

D.

39. Look at this diagram.

Triangle 1

Which triangle is the image of Triangle 1 after it is rotated 90 degrees clockwise about the origin?

A. Triangle *A* B. Triangle *B*

C. Triangle *C* D. Triangle *D*

40. In the diagram below, ∠*HDA* and ∠*ADR* are supplementary.
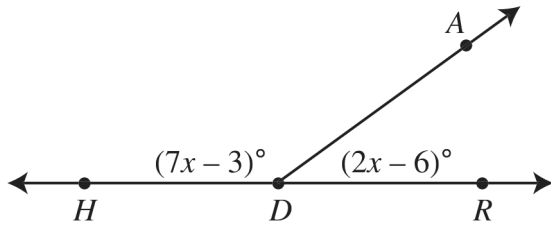
What is the value of *x*?

A. 21 B. 18 C. 11 D. 9

41. In the diagram below, line *l* is parallel to line *m*, and line *k* intersects both lines.
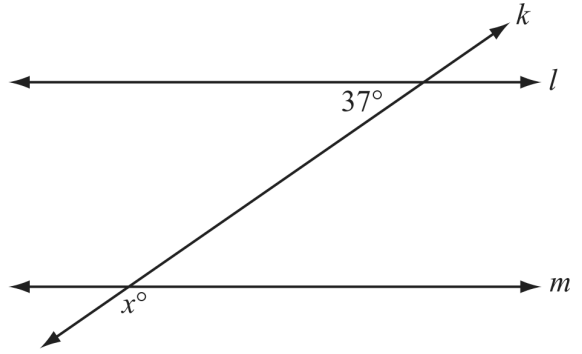
Based on the angle measure in the diagram, what is the value of *x*?

A. 37 B. 53 C. 127 D. 143

42. Given $\overleftrightarrow{RS} \parallel \overleftrightarrow{TU}$, $m\angle 7 = 3x - 10$, and $m\angle 3 = (2x+5)$
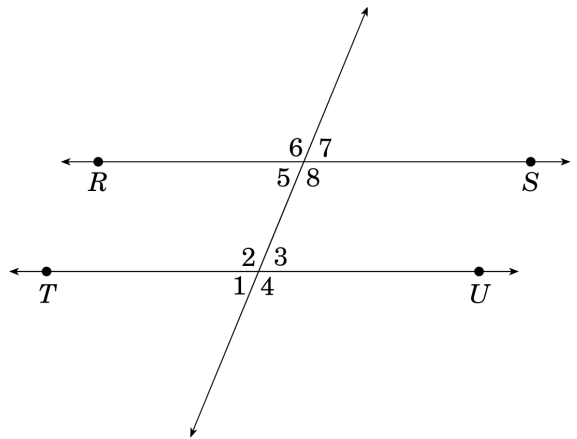
What is $m\angle 1$?

A. 145 B. 75 C. 35 D. 15

43. In the figure below, lines *m* and *n* are parallel. If $m\angle 1 = 100°$, then find $m\angle 5$.

A. 80° B. 100° C. 110° D. 140°

44. A pentagon and the measures of four of its angles are shown below.

What is the value of x?

A. 145   B. 120   C. 80   D. 60

45. Wanda outlined the shape of her school playground, as shown below.
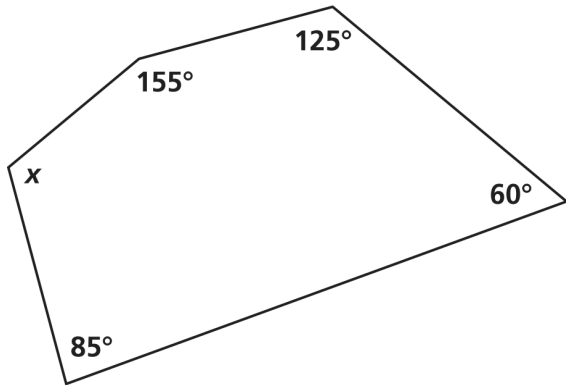
What is the value of x in Wanda's outline?

A. 60°   B. 115°   C. 120°   D. 295°

46. Darius and his father are constructing a set of bunk beds as shown in the diagram below.

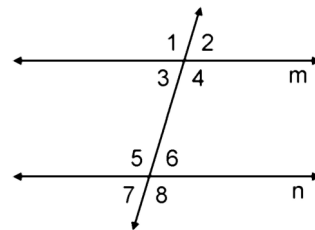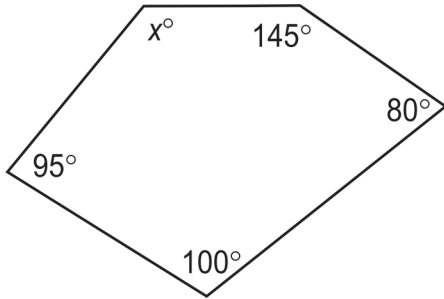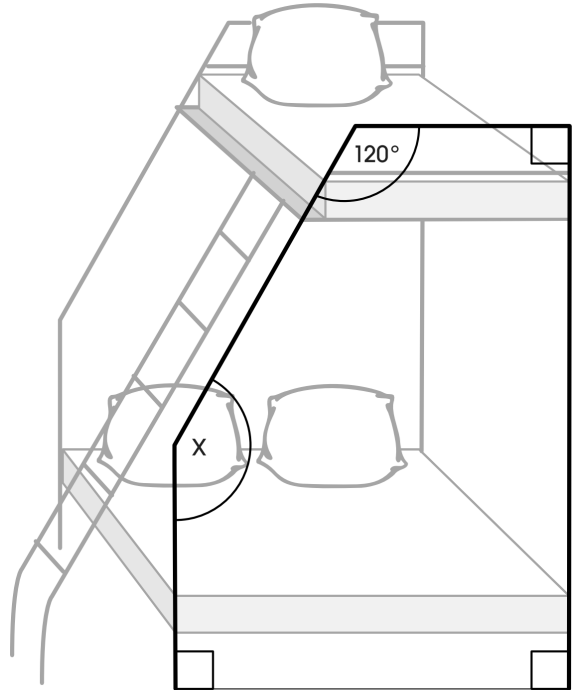What is the measure of angle X?

A. 540°   B. 390°   C. 150°   D. 120°

47. Claire uses 5 straws as the sides of a regular polygon. Each straw is used as one side of the polygon. What is the sum of the measures of the interior angles of the polygon?

A. 360°   B. 540°   C. 720°   D. 900°

48. Harry measured all but one angle of a hexagon. The total degree measure for all of the angles he measured was 550°. What is the measure, in degrees, of the remaining angle?

A. 92°   B. 120°   C. 170°   D. 720°

49. *Use the regular hexagon below to answer the question.*
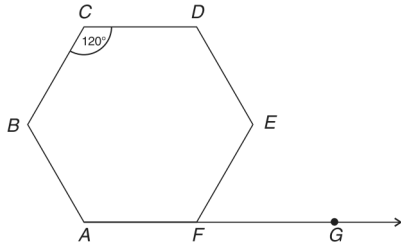
How many degrees are in ∠*EFG*?

A. 80°   B. 240°   C. 60°   D. 120°

50. A machinist is making the stop sign shown below by cutting a regular octagon from a square piece of metal.
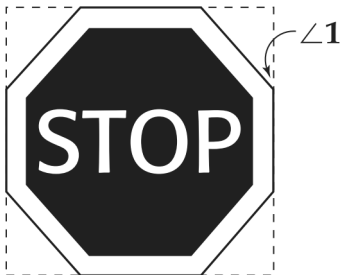
What is the measure of ∠1?

A. 45°   B. 60°   C. 120°   D. 135°

51. What is the measure of angle 1 in the figure below?
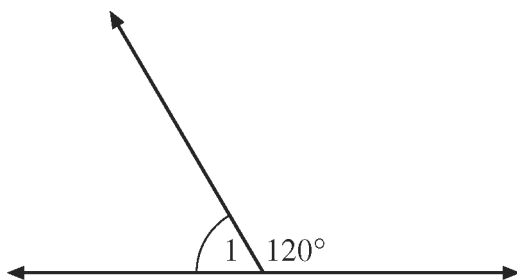
A. 30°   B. 40°   C. 60°   D. 80°

52. In the figure below, $\overleftrightarrow{CD}$ intersects $\overleftrightarrow{AB}$ at *F*, $m\angle CFB = 50°$, and $\angle EFA \cong \angle AFD$. What is $m\angle EFC$?
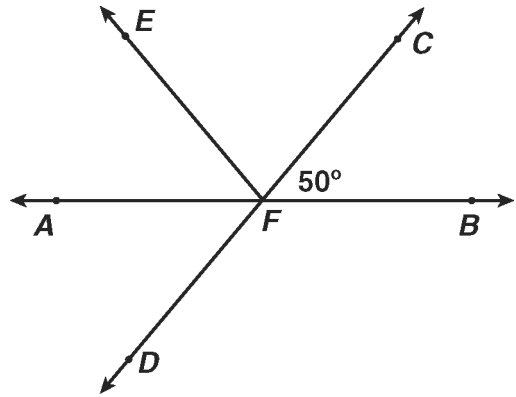
A. 40°   B. 50°   C. 70°   D. 80°

53. What is the supplement of a 40° angle?

A. 50°   B. 130°   C. 140°   D. 220°

54. **Use the diagram below to answer the question.**
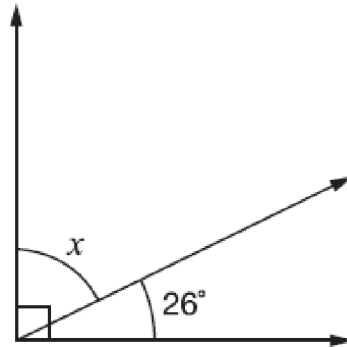
What is the measure of *x*?

A. 26°   B. 64°   C. 90°   D. 116°

55. **Use the figure below to answer the question.**

What is the value of *x*?

A. 39°   B. 48°   C. 51°   D. 81°

56. Angle *XYZ* is a 180° angle. Angle *XYZ* is divided into three smaller angles, as shown below.

What is the measure of angle *XYP*?

A. 35°   B. 45°   C. 55°   D. 125°

57. The figure shows **supplementary** angles.

What is the measure of angle *D*?

A. 45°   B. 135°   C. 180°

58. In the diagram below, lines *r*, *s*, and *q* intersect at one point.

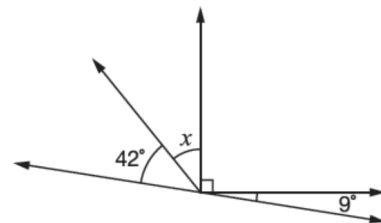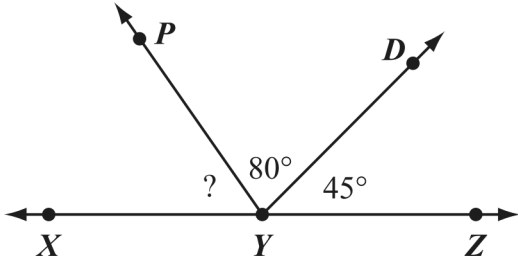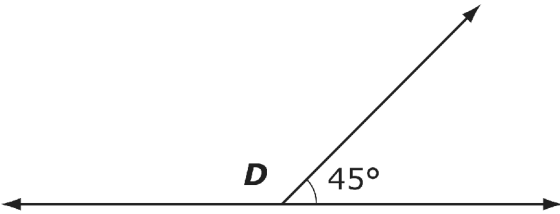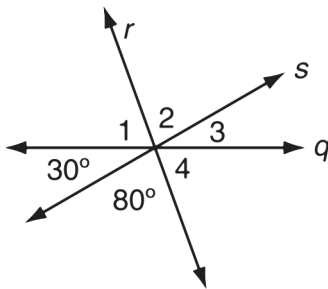What is the sum of the measures of ∠3 and ∠4?

A. 90°   B. 95°   C. 100°   D. 110°

59. Find the measure of angle *m*:
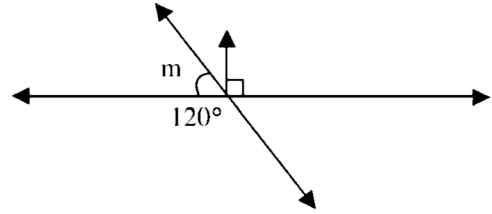
A. 30°   B. 45°   C. 60°   D. 90°

60. Angles J and K are vertical angles. The measure of angle J is 46°. What is the measure of angle K?

A. 44°   B. 46°   C. 134°   D. 136°

61. If $\triangle ABC \sim \triangle EDF$, which of the following completes this proportion?

$$\frac{AB}{ED} = \frac{AC}{?}$$
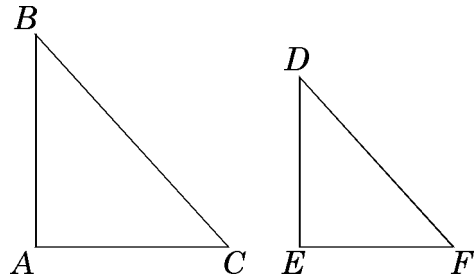
A. *EF*   B. *DF*   C. *BC*   D. *ED*

62. Triangle PQR is similar to triangle DEF as shown.
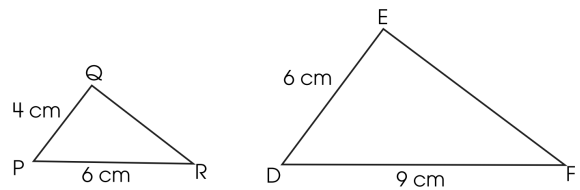
Which describes the relationship between the corresponding sides of the two triangles?

A. $\dfrac{PQ}{DE} = \dfrac{4}{6}$ B. $\dfrac{PQ}{DE} = \dfrac{6}{4}$

C. $\dfrac{PQ}{EF} = \dfrac{4}{9}$ D. $\dfrac{PR}{DE} = \dfrac{6}{6}$

63. Two similar trapezoids are shown.

Which proportion must be true?

A. $\dfrac{MN}{IJ} = \dfrac{NK}{JG}$

B. $\dfrac{MN}{IJ} = \dfrac{MN}{KL}$

C. $\dfrac{MN}{NK} = \dfrac{JG}{IJ}$

D. $\dfrac{MN}{IJ} = \dfrac{IJ}{HI}$

64.
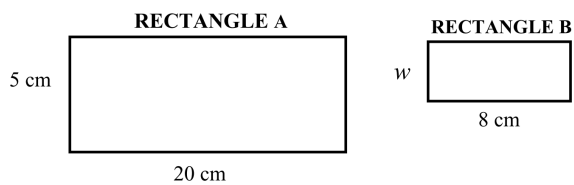
The lengths of the corresponding sides of the rectangles above are proportional. What proportion can be used to find the length of side w of rectangle B?

A. $\dfrac{5}{8} = \dfrac{w}{20}$

B. $\dfrac{w}{8} = \dfrac{20}{5}$

C. $\dfrac{5}{8} = \dfrac{20}{w}$
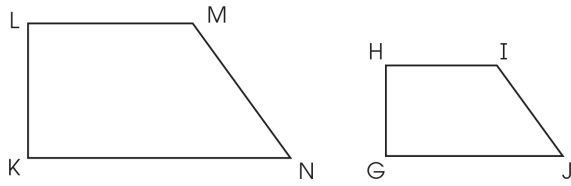
D. $\dfrac{5}{20} = \dfrac{w}{8}$

65. Triangle PQR is similar to triangle VWX.
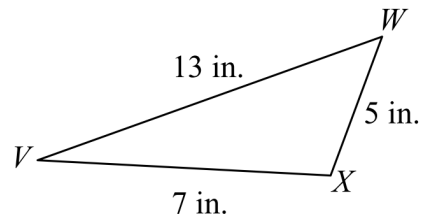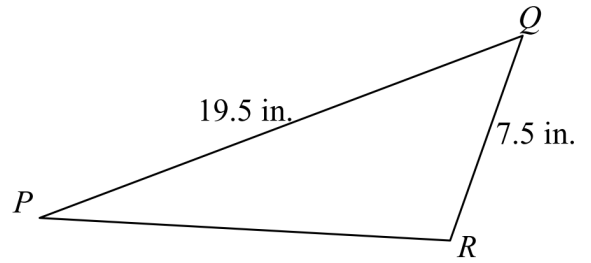
What is the length of $\overline{PR}$?

A. 7.5 in.

B. 9.5 in.

C. 10.5 in.

D. 13.5 in.

66. If $\triangle XYZ$ is similar to $\triangle STU$, what is the length of $\overline{XY}$ in centimeters?
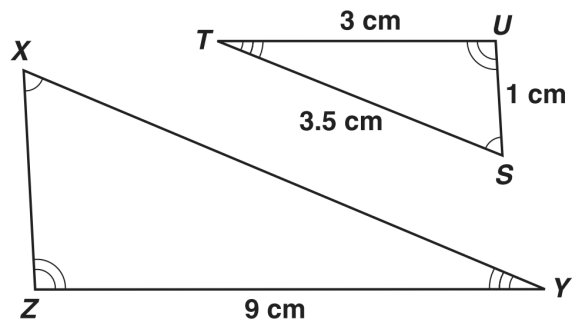
A. 9   B. 10.5   C. 12   D. 12.5

67. In the diagram below, quadrilateral *FGHJ* ≅ quadrilateral *RSTV*.

G   6 m   **H**

18 m

F

J

V

18 m

T

112°

6 m

125°

S   **R**
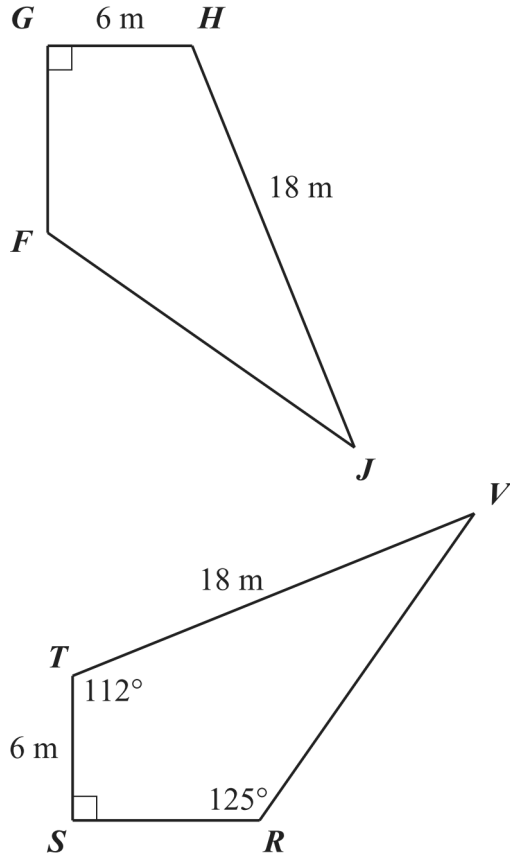
Based on the measurements in the diagram, what is $m\angle F$?

A. 33°   B. 90°   C. 112°   D. 125°

68. In the diagram below, triangle *ABC* is similar to triangle *XYZ*.

B

Y

A

Z

C   *X*
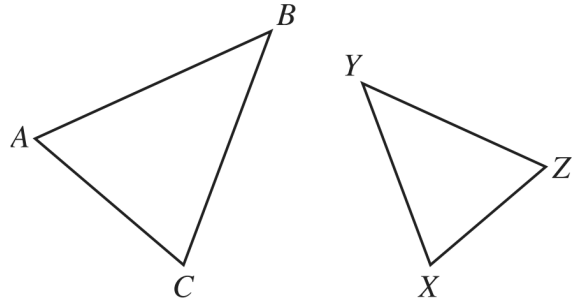
Which angle corresponds to ∠*Z*?

A. ∠*B*   B. ∠*C*   C. ∠*X*   D. ∠*Y*

Review Sheet (Midterm - Regular Geometry)   12/10/2016

1.			21.	
Answer:	B		Answer:	D
2.			22.	
Answer:	A		Answer:	D
3.			23.	
Answer:	B		Answer:	A
4.			24.	
Answer:	B		Answer:	D
5.			25.	
Answer:	B		Answer:	
6.			26.	
Answer:	B		Answer:	D
7.			27.	
Answer:	D		Answer:	A
8.			28.	
Answer:			Answer:	A
9.			29.	
Answer:			Answer:	B
10.			30.	
Answer:	D		Answer:	C
11.			31.	
Answer:	A		Answer:	D
12.			32.	
Answer:	B		Answer:	D
13.			33.	
Answer:	C		Answer:	A
14.			34.	
Answer:	D		Answer:	A
15.			35.	
Answer:	D		Answer:	A
16.			36.	
Answer:	B		Answer:	C
17.			37.	
Answer:	D		Answer:	D
18.			38.	
Answer:	D		Answer:	D
19.			39.	
Answer:	A		Answer:	C
20.			40.	
Answer:	B		Answer:	A

41.
Answer: D

42.
Answer: C

43.
Answer: B

44.
Answer: B

45.
Answer: B

46.
Answer: C

47.
Answer: B

48.
Answer: C

49.
Answer: C

50.
Answer:

51.
Answer: C

52.
Answer: D

53.
Answer: C

54.
Answer: B

55.
Answer: A

56.
Answer: C

57.
Answer: B

58.
Answer: C

59.
Answer: C

60.
Answer: B

61.
Answer: A

62.
Answer: A

63.
Answer: A

64.
Answer:

65.
Answer: C

66.
Answer: B

67.
Answer: D

68.
Answer: B