

Geometry Cumulative Study Guide

Test 15

Name: _____

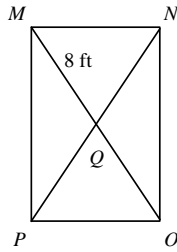
Date: _____

Period: _____

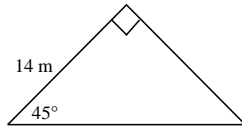
Numeric Response

1. The perimeter of $\triangle ABC$ is 22 inches, and $\angle A \cong \angle B$. If $\overline{AB} = 8$ inches, determine the length, in inches, of segment \overline{AC} .

2. A rectangular tabletop has diagonal braces as shown below. If \overline{MQ} is 8 feet long, what is the length, in feet, of \overline{NP} ?



3. Find the perimeter of the triangle shown below. Round to the nearest tenth meter.



4. Find the perimeter of rectangle $EFGH$ with coordinates $E(-4, 2)$, $F(-2, 2)$, $G(-2, 8)$, and $H(-4, 8)$.

5. Find the volume, in cubic feet, of a right prism where the base is a 11-foot-by-9-foot rectangle and the height is 2 feet.

6. A swimming pool is in the shape of a cylinder with a height of 7 feet and a radius of 18 feet. How many cubic feet of water can the swimming pool hold? Use 3.14 for π .

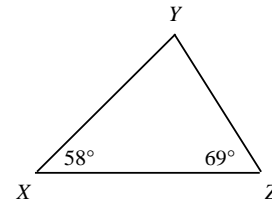
7. Use a calculator to evaluate the expression $\cos 37^\circ$. Round the answer to the nearest hundredth.

8. Calculate the surface area, in square meters, of a regular hexagonal pyramid with a slant height of 7 meters and a base side length of 2 meters.

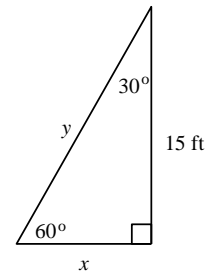
Problem

9. Write the equation of a line that is perpendicular to $y = \frac{3}{2}x$ and passes through the point $(-9, 11)$.

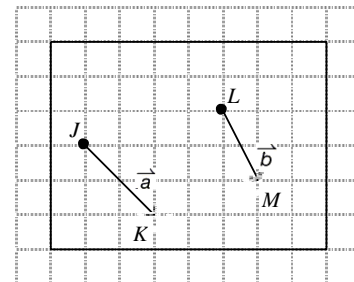
10. Order the sides of $\triangle XYZ$ from least to greatest.



11. Find the perimeter of the triangle shown below. Give your answer in simplified radical form.

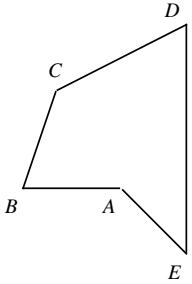


12. Add vectors \vec{a} and \vec{b} in the diagram below.

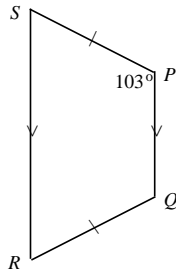


13. Use the apothem and perimeter to find the area of a regular hexagon with side length 4 feet.

14. Reflect the figure shown below across \overleftrightarrow{DE} .

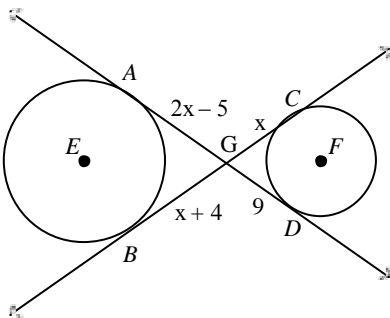


15. Find the measures of $\angle Q$, $\angle R$, and $\angle S$ in trapezoid $PQRS$.

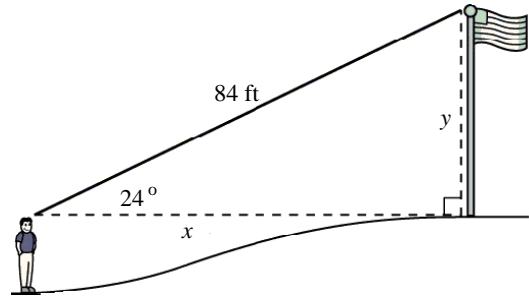


16. A square has vertices $P(1, 1)$, $Q(6, 1)$, $R(6, 6)$, and $S(1, 6)$. It is translated 6 units to the left. What are the coordinates of P' , Q' , R' , and S' ?

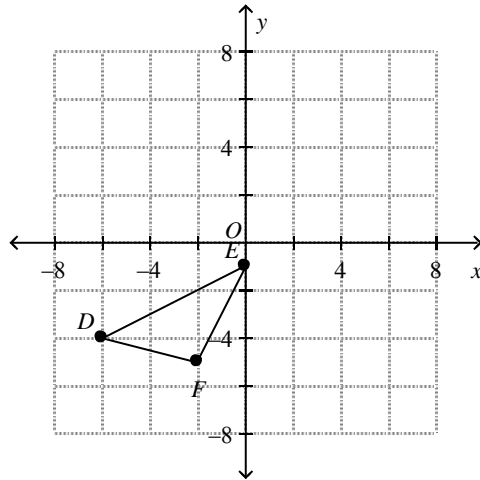
17. In the diagram below, \overleftrightarrow{AD} and \overleftrightarrow{BC} are internal common tangents to $\odot E$ and $\odot F$. Find the lengths of \overline{AG} and \overline{BG} .



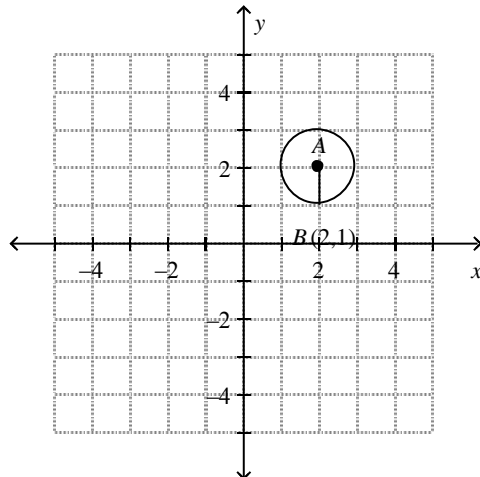
18. In the diagram below, use the angle of elevation between the flag and the person to find the horizontal distance between the flag and the person, and the height of the flag.



19. In the diagram below, reflect $\triangle DEF$ across the y -axis. Find the coordinates of the vertices of the reflected image and write the transformation in mapping notation.



20. In the diagram below, if B is a point on $\odot A$, write the equation of $\odot A$.



Geometry Cumulative Study Guide Test 15

Answer Section

NUMERIC RESPONSE

1. ANS: 7

PTS: 1 REF: Lesson 51: Properties of Isosceles and Equilateral Triangles
 NAT: NCTM G.1b TOP: Cumulative Test 15 MSC: Geom_S06_00055

2. ANS: 16

PTS: 1 REF: Lesson 52: Properties of Rectangles, Rhombuses, and Squares
 NAT: NCTM G.1a TOP: Cumulative Test 15 MSC: Geom_S06_00058

3. ANS: 47.8

PTS: 1 REF: Lesson 53: 45°-45°-90° Right Triangles
 NAT: NCTM G.1a TOP: Cumulative Test 15 MSC: Geom_S06_00062

4. ANS: 16

PTS: 1 REF: Lesson 57: Finding Perimeter and Area with Coordinates
 NAT: NCTM G.2b TOP: Cumulative Test 15 MSC: Geom_S06_00066

5. ANS: 198

PTS: 1 REF: Lesson 59: Finding Surface Areas and Volumes of Prisms
 NAT: NCTM M.2b TOP: Cumulative Test 15
 MSC: Geom_S06_00071

6. ANS: 7121.52

PTS: 1 REF: Lesson 62: Finding Surface Areas and Volumes of Cylinders
 NAT: NCTM M.2b TOP: Cumulative Test 15
 MSC: Geom_S07_00050

7. ANS: 0.80

PTS: 1 REF: Lesson 68: Introduction to Trigonometric Ratios
 NAT: NCTM G.1d TOP: Cumulative Test 15 MSC: Geom_S07_00055

8. ANS: 52.39

PTS: 1 REF: Lesson 70: Finding Surface Areas and Volumes of Pyramids
 NAT: NCTM M.2b TOP: Cumulative Test 15
 MSC: Geom_S07_00063

PROBLEM

9. ANS:

$$y = -\frac{2}{3}x + 5$$

PTS: 1 REF: Lesson 37: Writing Equations of Parallel and Perpendicular Lines

NAT: NCTM A.4 TOP: Cumulative Test 15 MSC: Geom_S04_00090

10. ANS:
 $\overline{XZ}, \overline{YZ}, \overline{XY}$

PTS: 1 REF: Lesson 39: Inequalities in a Triangle
 NAT: NCTM G.1a TOP: Cumulative Test 15 MSC: Geom_S04_00098

11. ANS:
 $15 + 15\sqrt{3}$

PTS: 1 REF: Lesson 56: 30°-60°-90° Right Triangles
 NAT: NCTM G.1a TOP: Cumulative Test 15 MSC: Geom_S06_00086

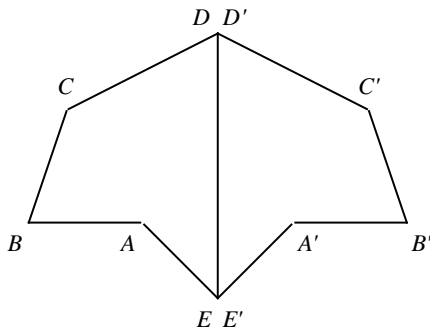
12. ANS:
 $\{3, -4\}$

PTS: 1 REF: Lesson 63: Introduction to Vectors NAT: NCTM NO.3a
 TOP: Cumulative Test 15 MSC: Geom_S07_00076

13. ANS:
 $24\sqrt{3}$ square feet

PTS: 1 REF: Lesson 66: Finding Perimeters and Areas of Regular Polygons
 NAT: NCTM M.2b TOP: Cumulative Test 15
 MSC: Geom_S07_00086

14. ANS:



PTS: 1 REF: Lesson 67: Introduction to Transformations
 NAT: NCTM G.3a TOP: Cumulative Test 15 MSC: Geom_S07_00092

15. ANS:
 $\angle Q = 103^\circ, \angle R = 77^\circ, \angle S = 77^\circ$

PTS: 1 REF: Lesson 69: Properties of Trapezoids and Kites
 NAT: NCTM G.1d TOP: Cumulative Test 15 MSC: Geom_S07_00097

16. ANS:
 $P'(-5, 1), Q'(0, 1), R'(0, 6), \text{ and } S'(-5, 6)$

PTS: 1 REF: Lesson 71: Translations NAT: NCTM G.3a
 TOP: Cumulative Test 15 MSC: Geom_S08_00071

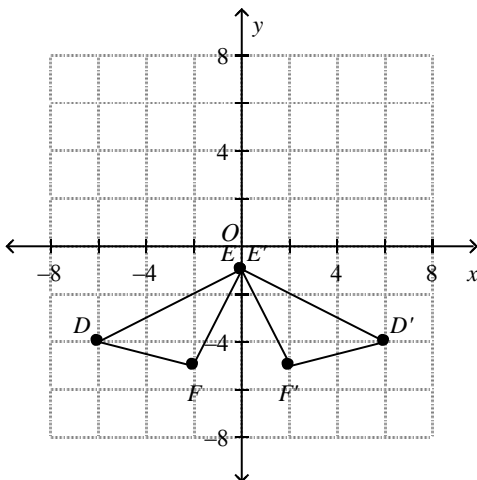
17. ANS:
 $AG = 13$; $BG = 13$

PTS: 1 REF: Lesson 72: Tangents and Circles, Part 2
 NAT: NCTM G.1a TOP: Cumulative Test 15 MSC: Geom_S08_00075

18. ANS:
 $x \approx 76.74$; $y \approx 34.17$; horizontal distance is about 77 feet; height is about 34 feet

PTS: 1 REF: Lesson 73: Applying Trigonometry: Angles of Elevation and Depression
 NAT: NCTM G.1d TOP: Cumulative Test 15 MSC: Geom_S08_00077

19. ANS:



$$T: (x, y) \rightarrow (-x, y)$$

$$T: D(-6, -4) \rightarrow (6, -4)$$

$$T: E(0, -1) \rightarrow (0, -1)$$

$$T: F(-2, -5) \rightarrow (2, -5)$$

PTS: 1 REF: Lesson 74: Reflections NAT: NCTM G.3a
 TOP: Cumulative Test 15 MSC: Geom_S08_00079

20. ANS:
 $(x - 2)^2 + (y - 2)^2 = 1$

PTS: 1 REF: Lesson 75: Writing the Equation of a Circle
 NAT: NCTM A.2b TOP: Cumulative Test 15 MSC: Geom_S08_00082