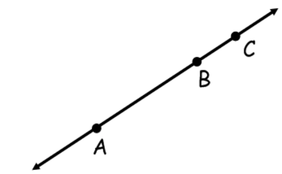
Final Exam Review Packet Name ______________________

Part 1: On the puzzle below, shade in the shapes with the correct symbol for the term.

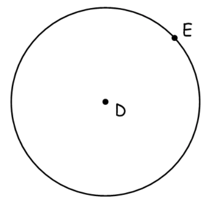
1. Congruent
2. Parallel
3. Therefore
4. And
5. Equal
6. Similar
7. Perpendicular
8. Greater Than
9. If and Only If

Part 2: On the puzzle below, shade in the shapes that contain correct names for the figure. More than one shape may be shaded for the figure.

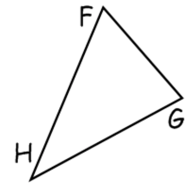
10. Line



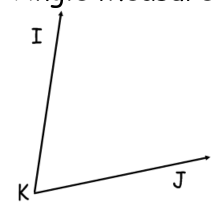
11. Circle



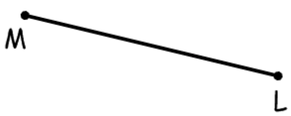
12. Triangle



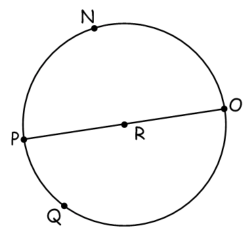
13. Angle Measure



14. Segment

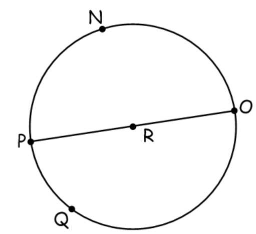


15. Minor Arc

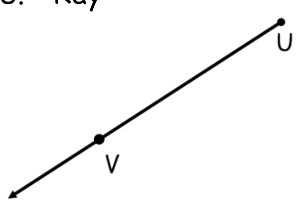


16. Segment Length

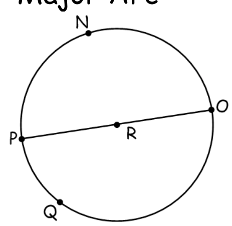
17. Semicircle



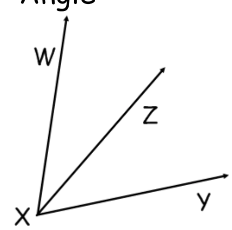
18. Ray



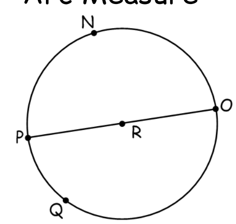
19. Major Arc

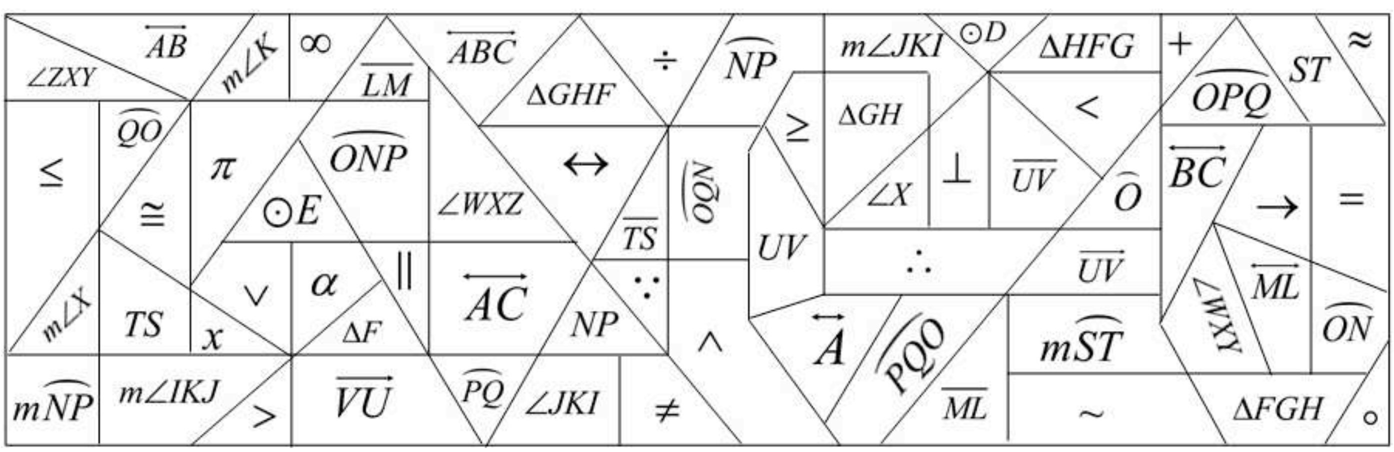


20. Angle



21. Arc Measure





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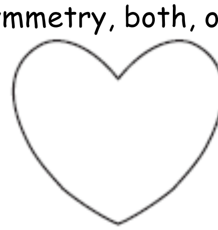
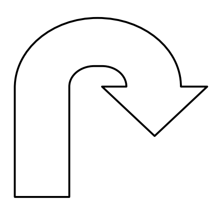
1. Identify whether the figure has line symmetry, rotational symmetry, both, or neither.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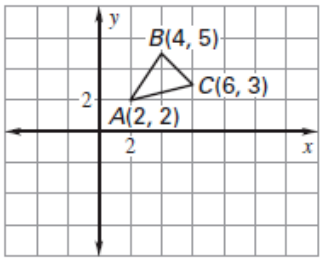
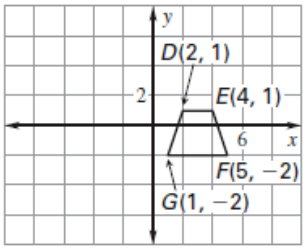
2. Perform the indicated transformation.

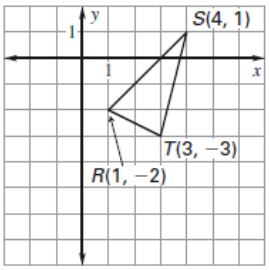
Rotate 180° about the origin.



Reflect over the y-axis.



Translate left 3 units and down 2 units.



Draw a geometry figure that represents the word or phrase.

3. Midpoint

4. Collinear Points

5. Coplanar Points

6. Skew Lines

7. Complementary Angles

8. Supplementary Angles

9. Perpendicular Lines

10. Parallel Lines

11. Transversal

12. Median of a triangle

13. Altitude of a triangle

14. Midsegment of a triangle

15. Common Tangent

16. Central Angle

17. Inscribed Polygon

18. Inscribed Angle

19. Intercepted Arc

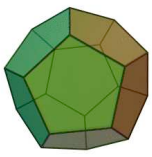
20. Circumscribed Circle

21. Angle of Depression

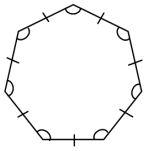
22. Angle of Elevation

Write the most specific name for the shape.

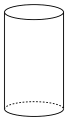
23. _____



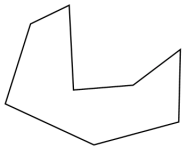
24. _____



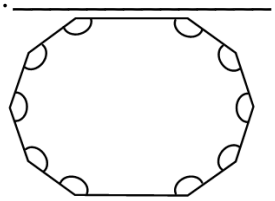
25. _____



26. _____

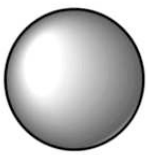


27. _____

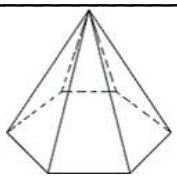


28. _____

29. _____



30. _____



31. For #23-30, circle every shape that is convex.

Concepts Review

For #1-8, you can answer with diagrams, explanations in your own words, or definitions, theorems, etc.

1. List the ways lines are guaranteed to be parallel.

2. List the ways lines are guaranteed to be perpendicular.

3. How do you **know** two shapes are congruent?

4. How do you **know** two shapes are similar?

5. How do you know if a quadrilateral is a parallelogram?

6. How do you determine if a parallelogram is a rhombus, rectangle, or square?

7. How do you know if a quadrilateral is a trapezoid or kite?

8. How do you know if a trapezoid is isosceles?

Complete each statement with Always, Sometimes, or Never.

9. Two lines cut by a transversal are _____ parallel.
10. If two shapes are congruent, then their corresponding parts are _____ congruent.
11. A chord is _____ a diameter.
12. In any triangle, the largest side is _____ opposite the smallest angle.
13. A parallelogram is _____ a rhombus.

For #14-18, use the following statement: If you play soccer, then you are an athlete.

14. Circle the hypothesis and underline the conclusion.

15. Write $p \rightarrow q$:

16. Write $q \rightarrow p$:

17. Write $\sim p \rightarrow \sim q$:

18. Write $\sim q \rightarrow \sim p$:

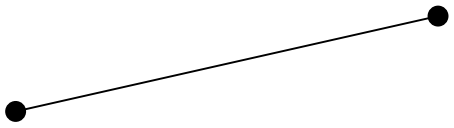
19. What phrase is in the middle of a biconditional statement? _____

Determine if each statement is True or False.

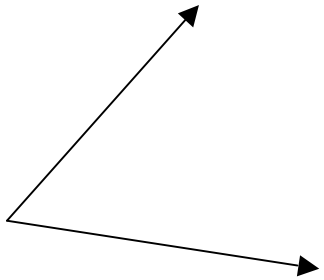
_____ 20. One example proves a conjecture is true.
_____ 21. Two triangles are congruent if all their angles are congruent.
_____ 22. Any three lengths can form a triangle.
_____ 23. All triangles have three midsegments.
_____ 24. In similar figures all angles are proportional and all sides are congruent.

Use a compass and straight edge to complete the following constructions.

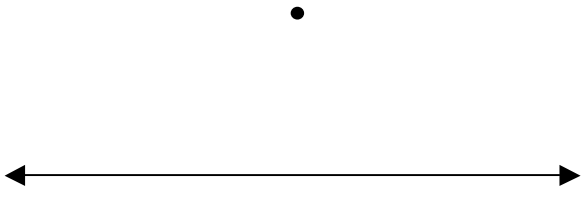
25. Construct a segment congruent to the segment below. Then, bisect the original segment.



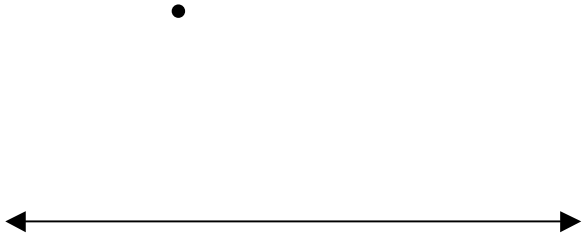
26. Construct an angle congruent to the angle below. Then, bisect the original angle.



27. Construct a line perpendicular to the line through the given point.

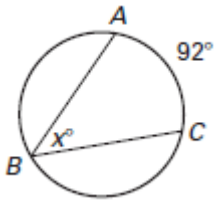


28. Construct a line parallel to the line through the given point.

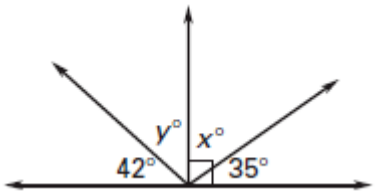


Find the indicated measure or variable.

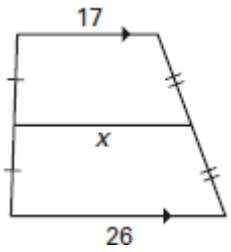
1. x = _____



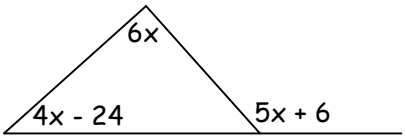
2. x = _____ y = _____



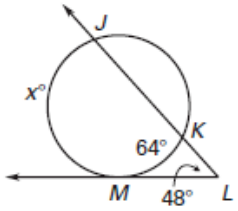
3. x = _____



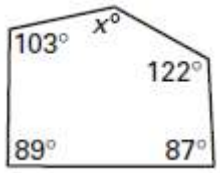
4. x = _____



5. x = _____ y = _____

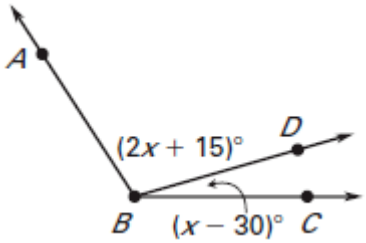


6. x = _____

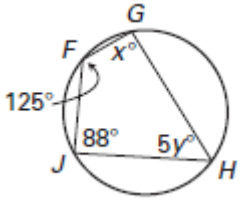


7. $m\angle ABD$= _____

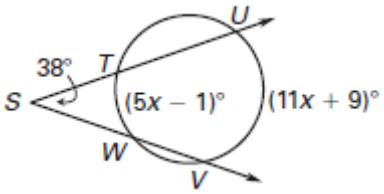
Given $m\angle ABC = 123^{\circ}$



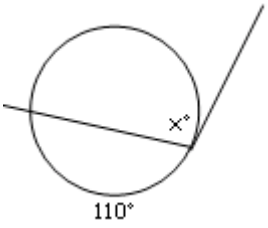
8. x = _____ y = _____



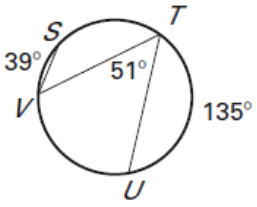
9. x = _____ y = _____



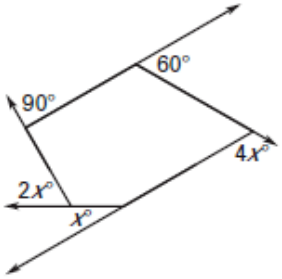
10. x = _____

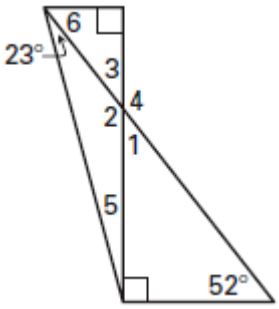


11. $m\overset{\frown}{VU}$ = _____ $m\angle SVT$ = _____



12. x = _____





13. Use the figure at the left to find the following angles:

$m\angle 1$ = _____ $m\angle 2$ = _____

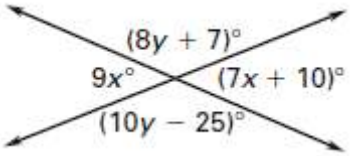
$m\angle 3$ = _____ $m\angle 4$ = _____

$m\angle 5$ = _____ $m\angle 6$ = _____

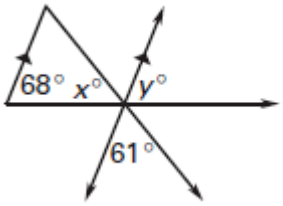
14. Find the sum of the interior angles of a dodecagon.

Find the indicated measure or variable.

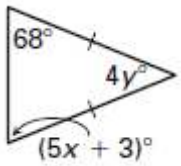
15. x = _____ y = _____



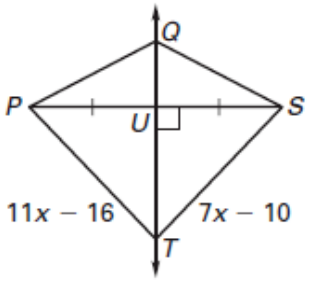
16. x = _____ y = _____



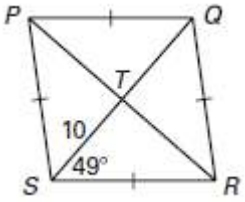
17. x = _____ y = _____



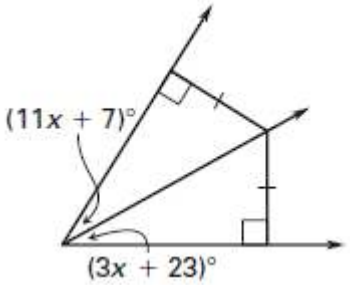
18. x = _____



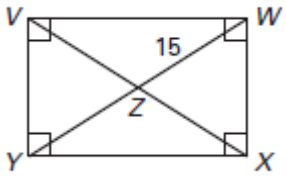
19. $m\angle PSQ$ =_____



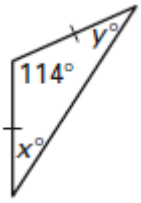
20. x = _____



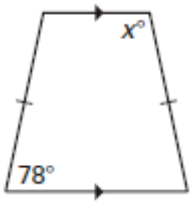
21. XV = _____



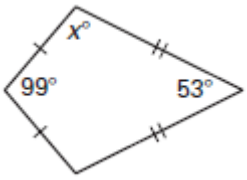
22. x = _____ y = _____



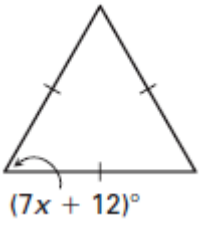
23. x = _____



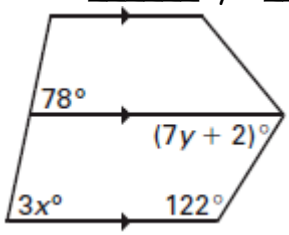
24. x = _____



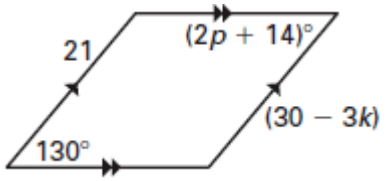
25. x = _____



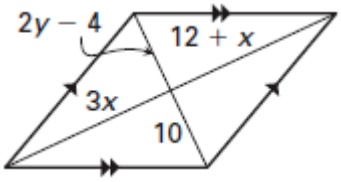
26. x = _____ y = _____



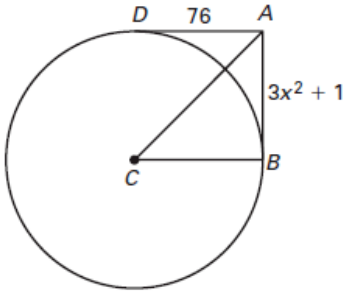
27. k = _____ p = _____



28. x = _____ y = _____



29. x = _____



30. The diagonals of a rhombus ABCD intersect at E. Given that $m\angle BAC = 50^{\circ}$, AD = 13, and DE = 10, find the indicated measure.

$m\angle ABE$ = _____

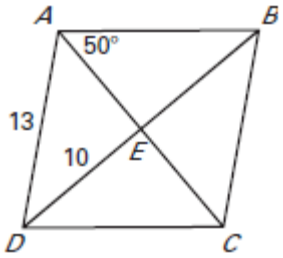
$m\angle DEC$ = _____

DB = _____

AE = _____

$m\angle DAC$ = _____

BC = _____

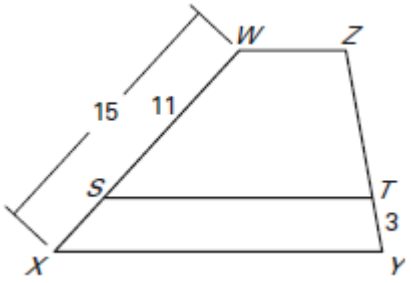


Find the indicated measure or variable.

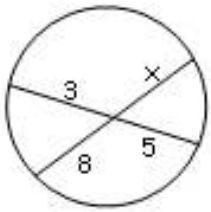
31. Two right cones have a scale factor of 1:5. What is the ratio of their volumes?

The larger cone has a volume of 1875□ cubic feet. Find the volume of the smaller cone.

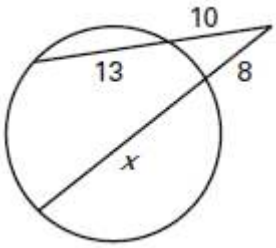
32. $\frac{XS}{XW} = \frac{YT}{YZ}$, TZ = _____



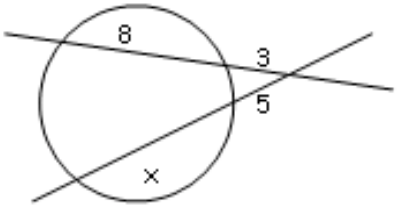
33. x = _____



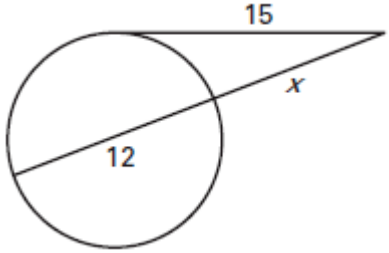
34. x = _____



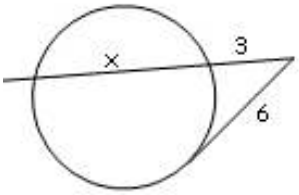
35. x = _____



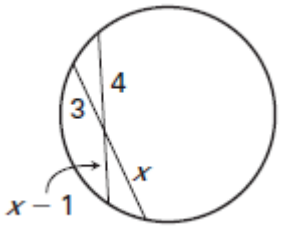
36. x = _____



37. x = _____

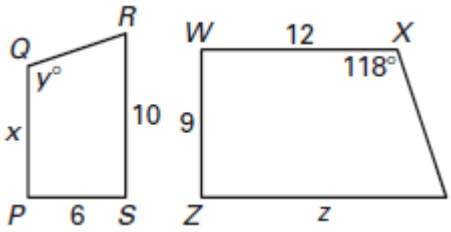


38. x = _____



39. Find the geometric mean of 12 and 18.

In the diagram PQRS ~ WXYZ



40. Find the scale factor of PQRS to WXYZ.

41. Find the values of x, y, and z.

42. What is the ratio of perimeters for these figures?

43. What is the ratio of areas for these figures?

Two cones are similar. The ratio of volumes of the smaller cone to the larger cone is 125 cm^2 to 216 cm^2.

44. What is the scale factor of the smaller to the larger cone?

45. What is the surface area ratio of the smaller to the larger cone?

Two rectangular prisms are similar. The scale factor of the larger to the smaller prism is 4 in to 3 in.

46. What is the surface area ratio of the larger to the smaller prism?

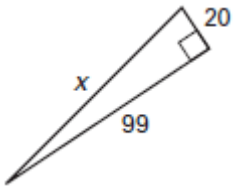
47. What is the volume ratio of the larger to the smaller prism?

Find the indicated measure or variable.

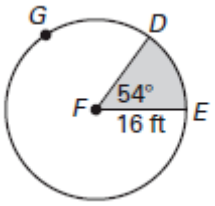
48. midpoint of $\overline{AB}$: _____
distance of $\overline{AB}$: _____

A(-3, 4) and B(1, -8)

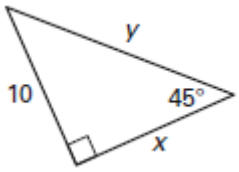
49. x = _____



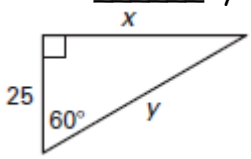
50. Length of $\overset{\frown}{DE}$ = _____



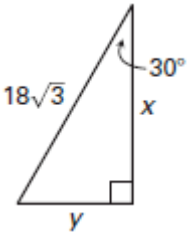
51. x = _____ y = _____



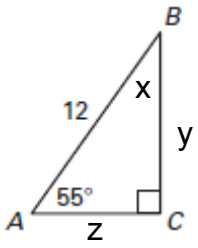
52. x = _____ y = _____



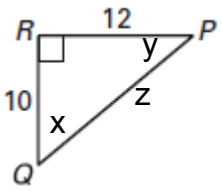
53. x = _____ y = _____



54. x = _____ y = _____
z = _____



55. x = _____ y = _____
z = _____

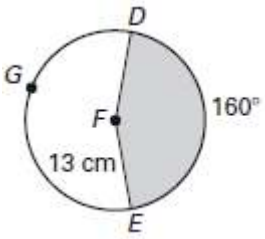


56. Find the value of n for the regular n-gon described.

a. Each interior angle has a measure of 165°.

b. Each exterior angle measures 60°

57. Shaded Sector Area=_____



58. In triangle ABC, AB = 9, BC = 12, and AC = x. What is the range of possible values for x?

59. In triangle ABC, AB = 9, BC = 12, and AC = x. What is the range of possible values for x?

60. Is it possible to construct a triangle with the given side lengths? If so, would the triangle be acute, right, or obtuse?

a. 11, 17, 29
b. 30, 32, 34
c. 15, 112, 113
d. 7, 9, $\sqrt{130}$

61. What are the measures of an interior angle and an exterior angle of a regular 30-gon?

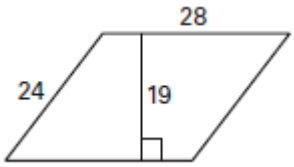
Interior = _____

Exterior = _____

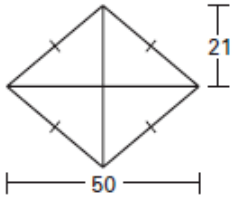
62. You are measuring the height of a Ferris wheel at an amusement park. You are standing 125 feet from its base. You measure the angle of elevation from a point on the ground to the top of the Ferris wheel to be 51°. Estimate the height of the Ferris wheel. Round your answer to the nearest foot.

Find the area of the figure.

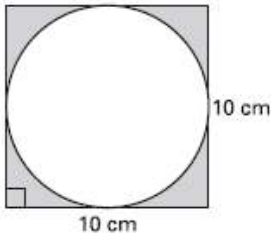
63. Area = _____



64. Area = _____

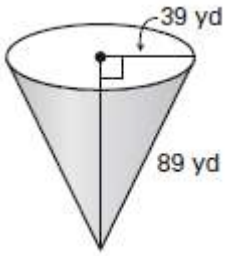


65. Shaded Area = _____

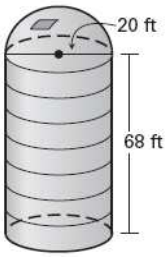


Find the volume & surface area of the figure.

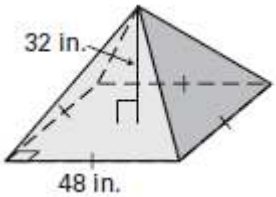
66. Surface Area = _____ Volume = _____



67. Surface Area = _____ Volume = _____



68. Surface Area = _____ Volume = _____



69. Surface Area = _____ Volume = _____