GEOMETRY FINAL REVIEW
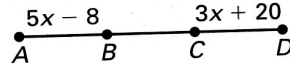
1. Given $\overline{AB} \cong \overline{BC}, \overline{BC} \cong \overline{CD}$. Find the value of AB.
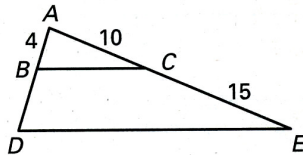
5x − 8   3x + 20
A   B   C   D

2. If the dimensions of a rectangle are multiplied by 2, what happens to the area of the rectangle.

The midsegment of the trapezoid is $\overline{RT}$. Find the value of *x*.

3.
8
R   11   T
x
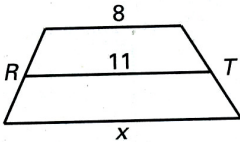
4. Given $\dfrac{AB}{BD} = \dfrac{AC}{CE}$, find BD.
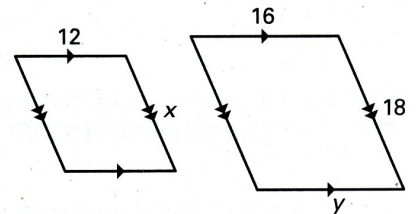
A
4   10
B   C
        15
D   E

5. Write the steps to the following proof:

Given: 8 = 6(-4x − 16)

Prove: x = -13/3
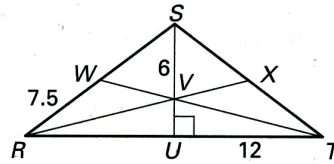
6. The two polygons are similar. Find the values of *x*.

16
12
x
18
y

Complete the statement by writing <, =, or >.

7. AB ___ AC

A
39°
29°
B   D   C
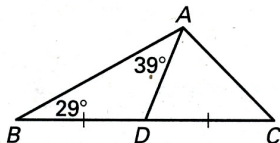
Use the diagram and the given information. V is the centroid of ΔRST. $\overline{SU} \perp \overline{RT}$.
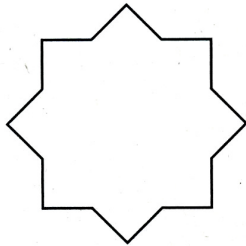
UT = 12, RW= 7.5, SV =6.

8. Find UV, ST, and SU.

9. Name all the isometries that map the frieze patterns onto itself.
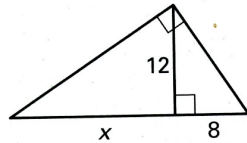
F⅂ F⅂ F⅂

10. How many lines of symmetry does the polygon at the right have?

Complete and solve the proportion.

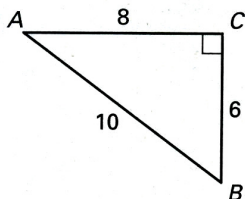11. $\dfrac{x}{12} = \dfrac{?}{8}$

Decide whether the side lengths given determine if the triangle is *right*, *acute*, or *obtuse*.

12. 8, 9, 15

Find the sine, the cosine, and the tangent of the acute angle A of the triangle (leave in non-reduced form).
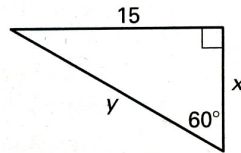
13.

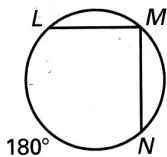**14. What is the pair of numbers with a geometric mean of 44.**

Use trigonometric ratios to find the value of each variable.
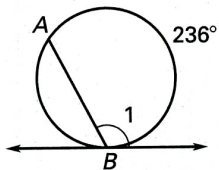
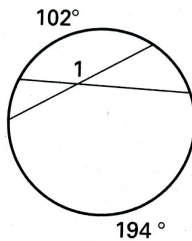**15. Find the value of x and y.**

Find the measure of ∠ LMN.

16.

Find the indicated measure.
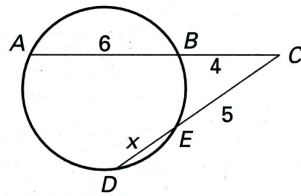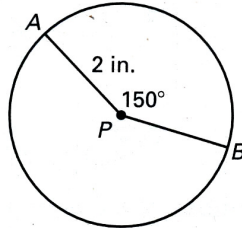
17.

18. Find the m∠1.

19. Give the center and radius of the circle: $(x+2)^2 + (y+2)^2 = 25$

20. Find the value of x.

21. Find the length of arc AB.
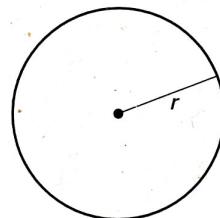

2 in.

150°

22. Find the area of the shaded region.
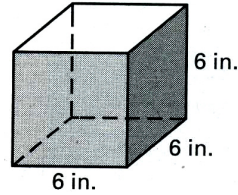

5.9 in.

80°
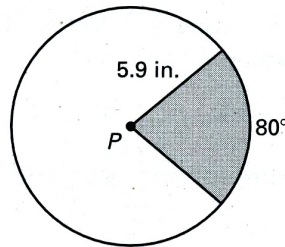
23. A regular polygon has an interior angle with a measure of 150^0. How many sides does the polygon have?
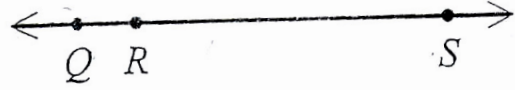
24. Find the radius.

$C = 300$ cm

25. Find the volume of the right prism.

6 in.

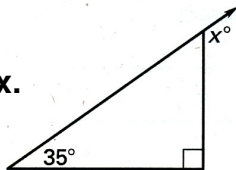6 in.

6 in.

26. If RS = 48.2 and QS = 85.2, find QR.

Q R   S

27. $\overrightarrow{EF}$ is the angle bisector of ∠TEA. Find the two angle measures not given in the diagram.
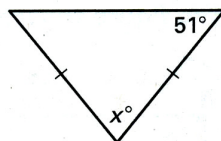
T

F

70°

E   A
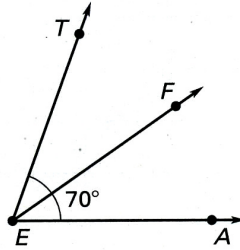
28. Find the value of x.

x°

35°

29. Find the value of x.

8x + 5   2x + 11

3x
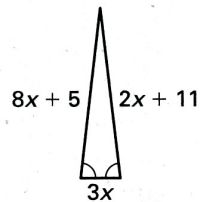
30. Find the value of x.

51°

x°

31. Find the value of x.

$5x°$ $3x°$
$40°$ $72°$
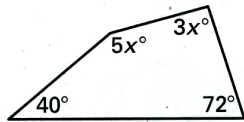
32. Find the unknown side length. Simplify answers that are radicals.

40
41 x
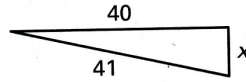
33. Find the m∠PSQ if m∠PSQ = 2y – 15 and m∠PRQ =y + 25.

P Q
S R

34. What is the value of *x*?

$115°$ $x°$
$155°$ $155°$
$155°$
$135°$ $115°$
$135°$
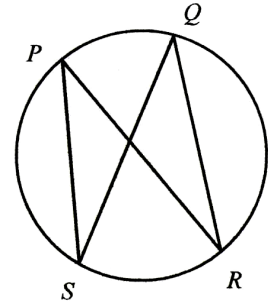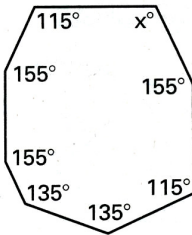
35. Find the value of x

$x°$
$30°$
$170°$
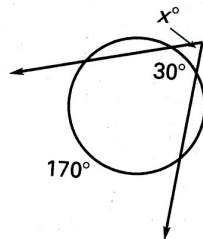
36. The rectangular part of the field is 100 yd long and the diameter of each semicircle is 20 yd. Find the cost of fertilizing the field at $0.20 per square yard. Round to nearest hundredth when necessary.

Π = 3.14

Length
diameter
diameter

37. Find the area of the shaded region: the length is 20; width of 10; diameter of circle is 4.

38. Luisa is conducting a survey to find the distance x across a swampy region in the Florida Everglades. She uses similar triangles to find the distance across the swamp.
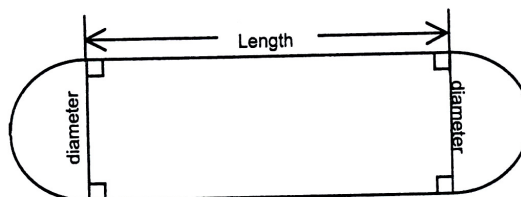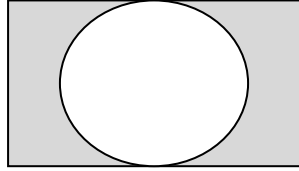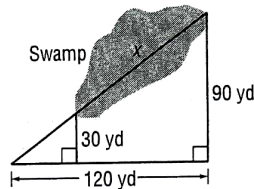
    a. Explain how you would solve for the swamp x.

    b. Write a proportion to solve for x. Why can you write this proportion?
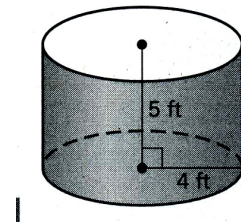
    c. Solve the proportion for x.

39. Find the volume and surface area of the sphere. Round the result to two decimal places
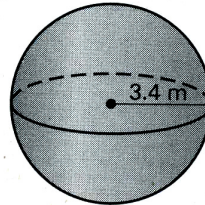
40. A silo made out of aluminum has a height of 5 ft and radius of 4 ft. Find the total surface area of the silo and what would be the cost at $0.002 per square ft to build.

1. 62

2. 4 TIMES

3. 14

4. 6

5.   8 = 6(-4x – 16)

     8 = -24x – 96

     104 = -24x

     104/-24 = x

   - 13/3 = x

6. 13.5

7. >

8. UV = 3   ST= 15   SU = 9

9. translation and vertical line reflection. Glide reflection

10. 8

11. 12; x = 18

12. obtuse

13. sin= 6/10   cos= 8/10   tan= 6/8

14. 16 and 121

15. $x = 5\sqrt{3}$ $y = 10\sqrt{3}$

16. 90^0

17. 118^0

18. 148^0

19. center (-2, -2) radius 5

20. 3

21. 5.23

22. 24.3

23. 12

24. 47.77

25. 216 in^3

26. 37

27. $\angle$TEF = 35^0 $\angle$FEA = 35^0

28. 125^0

29. 1

30. 78^0

31. 31^0

32. 9

33. 65º

34. 115^0

35. 70º

36. $462.80

37. 187.44

38. a. $\underline{90} = \underline{30}$ $90^2 + 120^2$ = side with swamp = 150
         150   150-x

     b. 8100 + 14400 = 22,500 = x^2 x = 150

39. V = 164.55 m^3 SA = 145.19m

40. SA= 226.08 sq ft x $0.002 = $ 0.45