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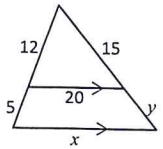
**Pre-AP Geometry** **Name** _____

**2019 Spring Final Review #2**

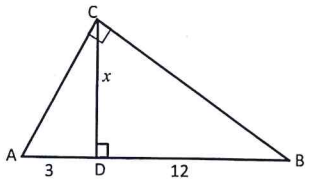
**Similarity, Right Triangles, & Trig**

1. If a 15-ft. flagpole cast a 24-ft. shadow at the same time that a nearby building casts a 108-ft. shadow, how tall is the building?

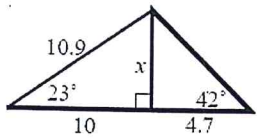
2. What are the values of x and y in the diagram at the right?




3. What is the value of x?

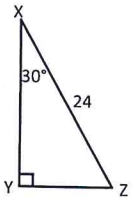



4. Give two equations that will find the length of x in the figure on the right.

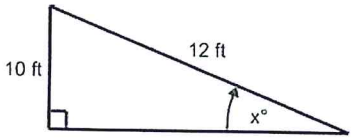



5. One acute angle of a certain right triangle has measure *n and the other is m*. If $\sin n° = \frac{3}{5}$, what is the ratio for $\tan m°$ ?

6. Use $\Delta XYZ$ at the right to answer this question. Find the lengths of the missing sides.




7. Find the value of x.



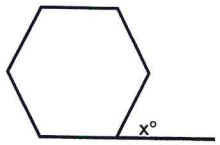

8. What is the radian equivalent of a 315°? What are the coordinates?

**Angles in Polygons/Quadrilaterals**

9. The diagonals of all parallelograms are _____.

10. Explain what the slopes would need to be in order to have an isosceles trapezoid.

11. In the regular polygon at the right, what is the measure of $\angle X$?




12. What is the measure of one interior angle of a regular octagon?

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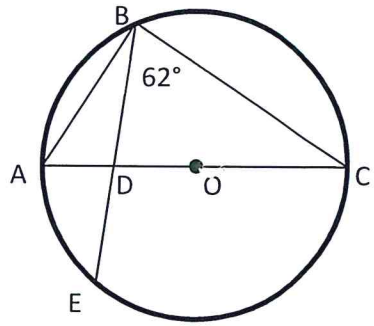
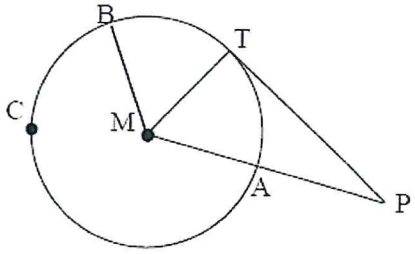
## Circles

13. In Circle O at the right, find the measure of CE.




14. If m∠TPM=54°, what is the measure of TBA?



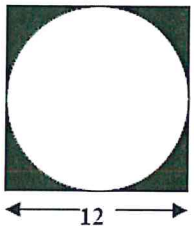

$\overline{PT}$ is tangent to ⊙M at T

## Area& Surface Area

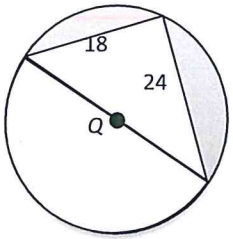
15. The area of a circle is 49π in. What is its circumference?

16. One side of rectangle is 16 cm and the perimeter is 72 cm. What is the area?

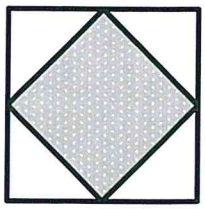
17. What is the exact area of the shaded region?



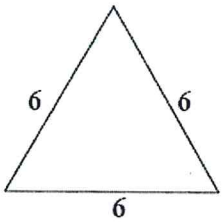

18. Find the area of the shaded part of circle Q.




19. A quilt is made from 12 inch squares as shown. If the vertices of the middle square are located at the midpoints of the larger square, what is the area of the inner patterned square?



20. What is the area of the equilateral triangle shown?



Name: _____ Class: _____ Date: _____ ID: A

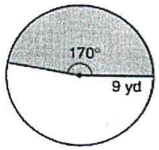
# Pre-AP Geo 2nd semester Review

## Multiple Choice

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

1. A woman's regulation fast pitch softball diamond is actually a square that measures 60 feet from base to base. To the nearest foot, what is the shortest distance from 1st base to 3rd base?
   A 60 feet
   B 85 feet
   C 120 feet
   D 240 feet

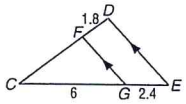
2. The designated fishhing area is a circular pond pictured below. Find the approximate area of shaded region.



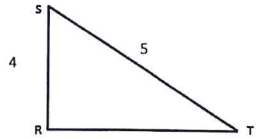

   A 120 $yd^2$
   B 140 $yd^2$
   C 134 $yd^2$
   D 127 $yd^2$

30. When a 5-foot vertical pole casts a 3-foot, 4-inch shadow, an oak tree casts a 20-foot shadow. Find the height of the tree.

31. Find $CD$.

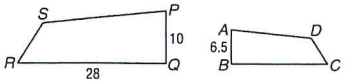



3. In $\triangle RST$, $\angle R$ is the right angle. Find tan $\angle S$.

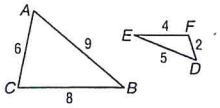



   A $\frac{5}{4}$
   B $\frac{4}{3}$
   C $\frac{3}{4}$
   D $\frac{4}{5}$

32. If quadrilateral $ABCD \sim$ quadrilateral $PQRS$, find $BC$.




33. Determine whether $\triangle ABC \sim \triangle DEF$. Justify your answer.

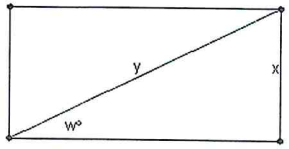





Name: _____ ID: A

must do: 2,4, 10-29, omit 22

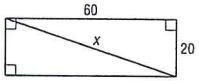
4. Which of the following trigonometric equations is valid for the side measurement x inches, diagonal measurement y inches, and angle measurement w° in the rectangle shown below?



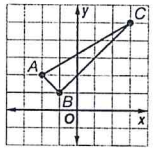

   A $\cos w° = \frac{x}{y}$
   B $\tan w° = \frac{y}{x}$
   C $\sin w° = \frac{x}{y}$
   D $\tan w° = \frac{x}{y}$

## Short Answer

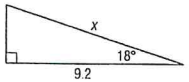
5. Find $x$. Find the missing angles of the triangle.



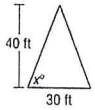

6. Determine whether $\triangle ABC$ is a right triangle. Explain your answer.



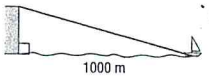

7. Find $x$ to the nearest tenth.




8. An A-frame house is 40 feet high and 30 feet wide. Find the angle that the roof makes with the floor. Round to the nearest degree.

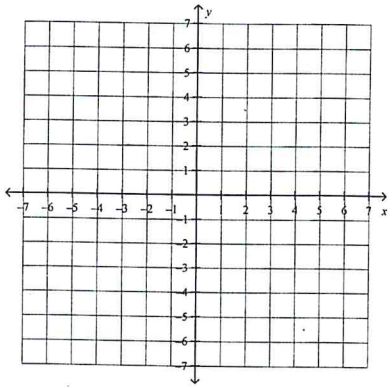



9. A boat is 1000 meters from a cliff. If the angle of depression from the top of the cliff to the boat is 15°, how tall is the cliff? Round your answer to the nearest tenth.



10. If the measure of each interior angle of a regular polygon is 171, find the number of sides of the polygon.

11. Determine whether the quadrilateral with vertices $A(5, 7)$, $B(1,-2)$, $C(-6, -3)$, and $D(2, 5)$ is a parallelogram. Use the slope formula.

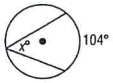


12. For quadrilateral $ABCD$, the slope of $\overline{AB}$ is $\frac{1}{4}$, the slope of $\overline{BC}$ is $-\frac{2}{3}$, and the slope of $\overline{CD}$ is $\frac{1}{4}$. Find the slope of $\overline{DA}$ so that $ABCD$ will be a parallelogram.

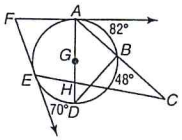
13. $ABCD$ is a parallelogram and $\overline{AC} \cong \overline{BD}$. Determine whether $ABCD$ is a rectangle. Justify your answer.

14. Find the radius and diameter of a frisbee with a circumference of $11\pi$ inches.

15. Find $x$.




**Use ⊙$G$ with $\overrightarrow{FA}$ and $\overrightarrow{FE}$ tangent at $A$ and $E$.**




16. Find $m\angle ACE$.

17. Find $m\angle ADB$.

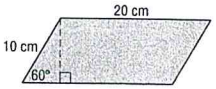
18. Find $m\angle AFE$.

19. Find $m\angle EHD$.

20. Write the equation of a circle with a radius of 10 and a center at $(-4, -9)$.

**Find the area of each parallelogram. Round to the nearest tenth if necessary.**

21.



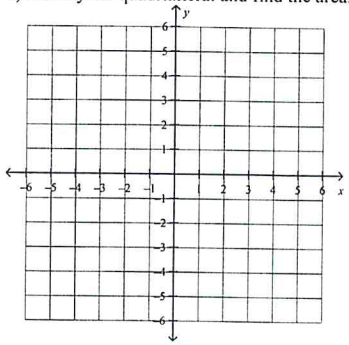




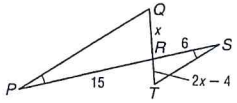

**Find the area of each quadrilateral given the coordinates of the vertices.**

22. $GHIJ$; $G(-2, 3)$, $H(1, 3)$, $I(2, -1)$, and $J(-3, -1)$

b) Identify the quadrialteral and find the area.



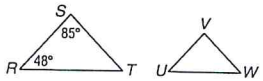
**Use the figure below.**




34. Identify the similar triangles.

35. Find $x$.

36. If $\triangle RST \sim \triangle UVW$, find $m\angle W$.

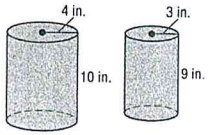



37. Determine the radius of a circle with an equation of $(x - 3)^2 + (y - 2)^2 = r^2$ and containing $(1, 4)$.

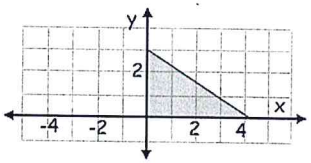
38. Graph $(x + 1)^2 + (y - 2)^2 = 16$.

25. Determine whether the statement *Two cubes are similar* is *always*, *sometimes*, or *never* true.

26. Determine whether these two cylinders are *congruent*, *similar*, or *neither*.

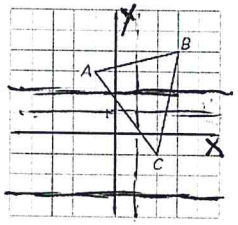



27. Suppose you rotate the right triangle 360 degrees about the y-axis. What is the resulting solid? _____




What is the Volume? _____

28. Dilate the figure by a scale factor of one-half about the origin. List the coordinates of the vertices of the image.




A' _____

B' _____

C' _____

29. Determine whether $\triangle ABC \sim \triangle DEF$. Justify your answer.