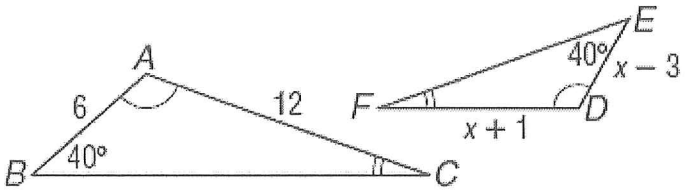
Name: _____ DUE: _____ HOUR: _____

Geometry Final Exam Review 2021

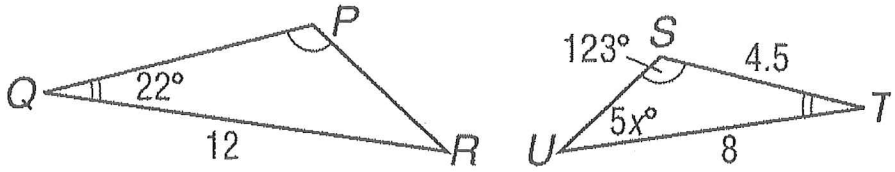
Directions: YOU MUST SHOW ALL WORK FOR EACH QUESTION.

1. Find x.



x = _____

2. Given $\Delta STU \sim \Delta PQR$, find x.

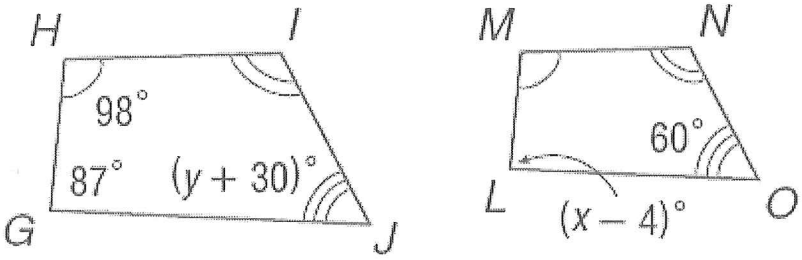


x = _____

3. Given Quadrilateral HIJG ~ Quadrilateral MNOL, find x and y.

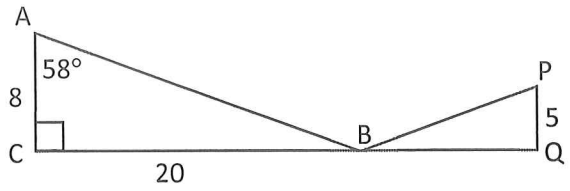
x = _____

y = _____



1.) x = 7 2.) x = 7 3.) x = 91, y = 30

4. $\Delta ABC \sim \Delta PBQ$. Find $\angle PBQ$ and BQ. Round to the nearest tenth.



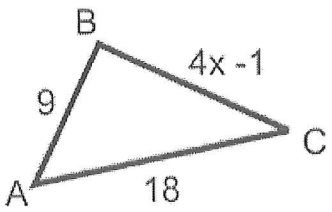
$\angle PBQ$ = _____

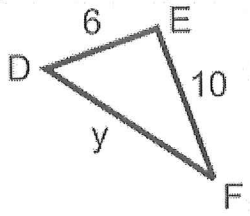
BQ = _____

5. Triangle EFG is a right triangle with right angle G. Triangle MFN is similar to Triangle EFG. M is on EF and N is on FG. MN is parallel to EG. EG = 9 in, GN = 8 in, NF = 10 in. Draw and label a diagram to model the description of triangles EFG and MFN. Find the measure of MN.

MN = _____

6. If $\Delta ABC \sim \Delta DEF$, *find the perimeter of* ΔABC. What is the ratio of ΔABC to ΔDEF?





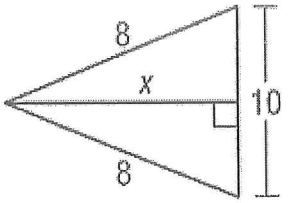
Perimeter ΔABC = _____

7. Timmy is flying a kite. The length of the string is 37 feet. The kite gets caught on the top of a tree that is perpendicular to the ground. Timmy is 10 feet from the tree's base. How tall is the tree? Round to the nearest tenth.

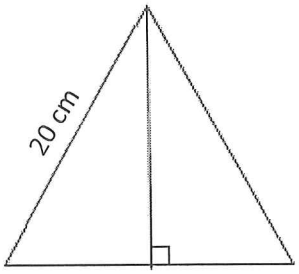
8. Triangle ABC has side lengths AB = 21, BC = 21 and CA = 42. Is ΔABC a right triangle?

4.) 32°, 12.5 5.) 5 6.) 42 7.) 35.6 8.) No → Show work explain

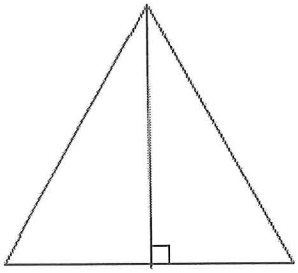
9. Find the area of the figure below. Round to the nearest tenth.



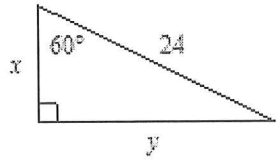
10. Find the exact altitude of an equilateral triangle whose sides are 20 cm long.



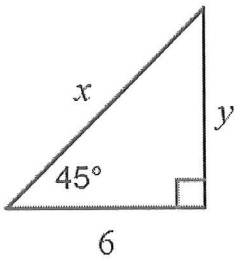
11. If the altitude is $6\sqrt{3}$, what is the perimeter of the equilateral triangle?



12. Find x and y.

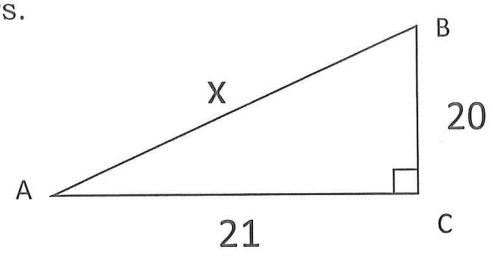


13. Find x and y.



9.) $5\sqrt{39}$ 10.) $10\sqrt{3}$ 11.) 36 12.) 12, $12\sqrt{3}$ 13.) $6\sqrt{2}$, 6

14. Consider the triangle ABC, shown below. Use the Pythagorean Theorem to find the exact value of the missing side. Then find all trig ratios below and simplify all answers.

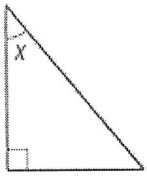


X= _____

sin ∠ A = _____ cos ∠ A = _____ tan ∠ A = _____

sin ∠ B = _____ cos ∠ B = _____ tan ∠ B = _____

15. In the figure, $\tan x = \frac{5}{12}$. Find cos x and sin x.

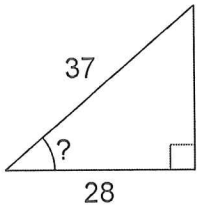


cos x = _____

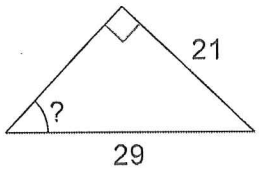
sin x = _____

16. Find the measure of the missing angle. Round to the nearest degree.

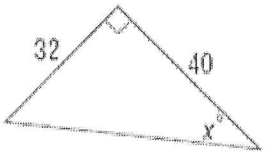
a.



b.

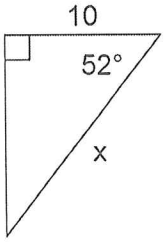


c.

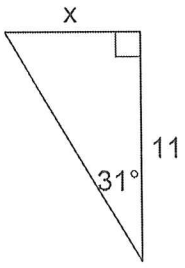


17. Solve to find each missing side. Round to the nearest tenth.

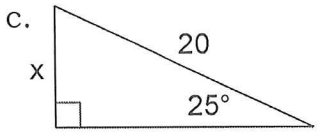
a.



b.

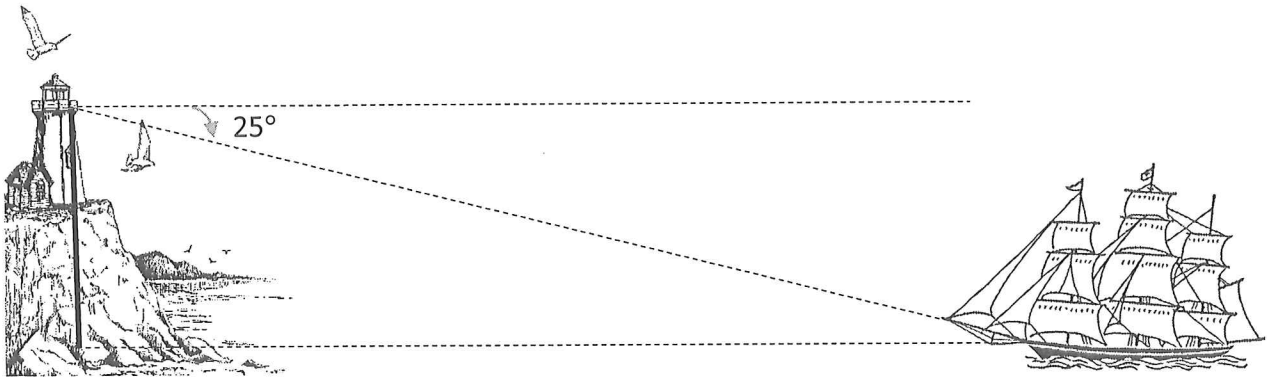


c.



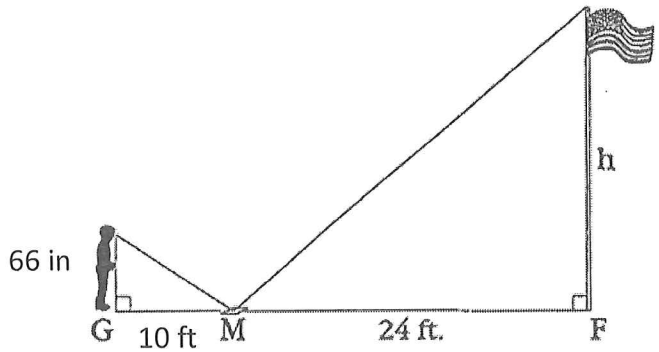
14.) $x = 29$ 15.) $\frac{12}{13}, \frac{5}{13}$ 16.) 41°, 46°, 39° 17.) 16.2, 6.6, 8.5

18. An engineer in a lighthouse is looking down at a beacon on a ship's bow. He measures the angle of depression as 25°. The viewing platform in the lighthouse is 30 m above sea level. How far away is the ship from the shore?



19. Triangle XYZ is a right triangle with right angle Y. XZ = 15 and ZY = 9. Find cos X.

20. Bob is looking in a mirror to see the top of a flagpole. He is standing 10 feet from the mirror. His eyes are 66 inches above the ground. He uses the following calculations to find the height of the flagpole. Find, describe, and correct his error.



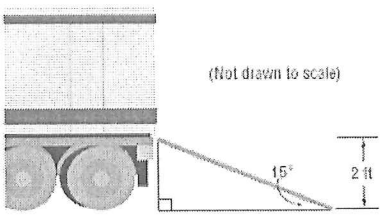
$$\frac{66\ in}{120\ in} = \frac{288\ in}{h}$$

21. Sierra doesn't know why she is not calculating the correct answer for her work. Find, describe, and correct her error.

Find the length of the ramp to the nearest foot.

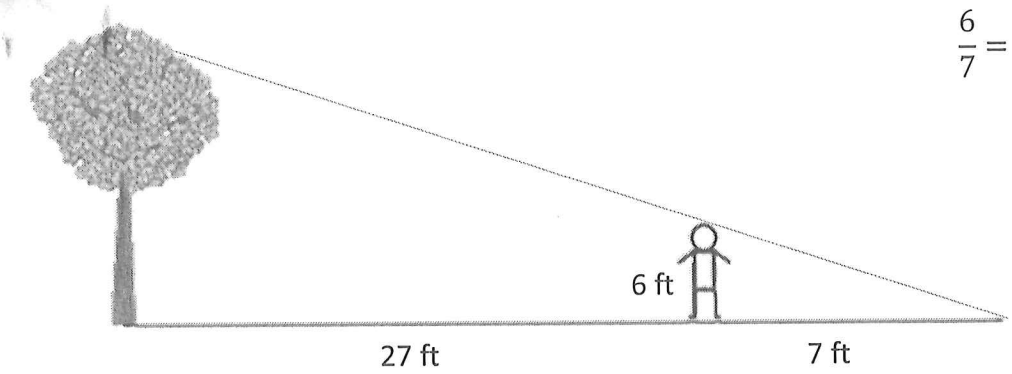
$\tan 15° = \frac{2\ ft}{?}$

The ramp is 7.5 ft long.



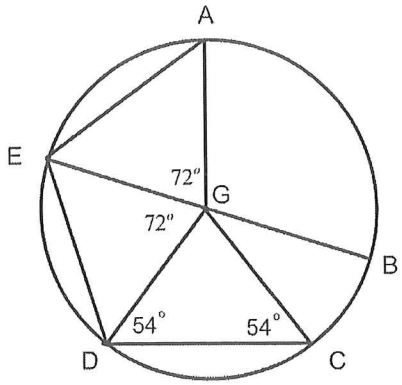
18.) 64 . 19.) $\frac{12}{15}$ 20.) 158.4 21.) tan

22. Jared read this problem in his textbook: "A six foot tall man casts a 7 foot shadow. A nearby tree casts a 27 foot shadow. Find the height of the tree." There was no picture with the problem in the book. Jared tried to solve this problem, but made a mistake. Find, describe, and correct his error.

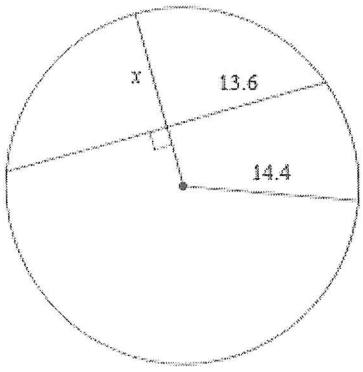


$$\frac{6}{7} = \frac{h}{34}$$

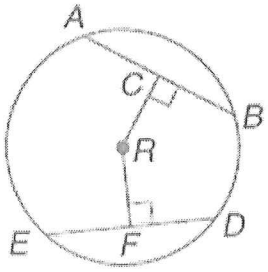
23. Given: EB is a diameter of circle G. True or False? If false, correct the statement to make it true.
    a. $\angle BGC = 72^0$
    b. AE // CD
    c. $\angle GED = \angle GDC$
    d. $\angle DGC = 54^0$
    e. $\overline{ED} \cong \overline{AG}$
    f. $\overline{AE} \cong \overline{CD}$



24. Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

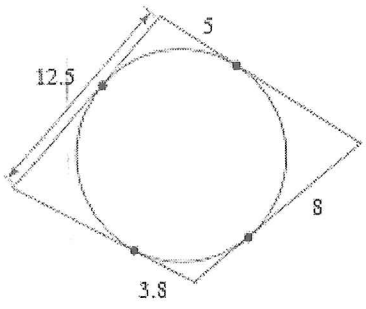


25. In circle $R, CR = RF, and\ ED = 30$ and the radius is 17. Find of RF.

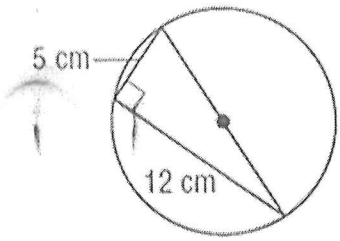


22.) 23.1 ft
23.) T = C, F
24.) 9.7
25.) 8.

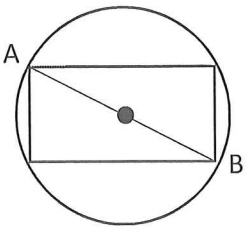
26. Find the perimeter of the polygon. Assume lines which appear to be are tangent.



27. What is the area of the circle? Round your answer to the nearest tenth.



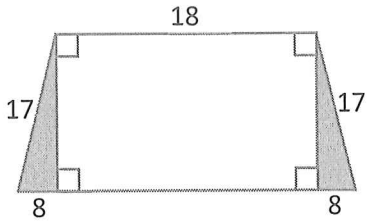
28. a. Find the exact area of the circle if arc length AB is 10π.
b. Find the exact area of the circle if the circumference is 10π.



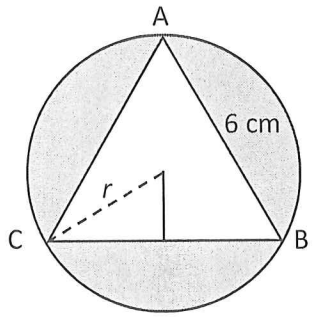
29. If the radius of a circle is 13 m and a central angle is 45°, find the length of the arc defined by the intersection of the central angle and the circle. Write your answer in terms of pi.

26.) 48.6 27.) 132.7 28.) $A = 100\pi, 25\pi$ 29.) $\frac{13\pi}{4}$

30. Find the area of the shaded region.



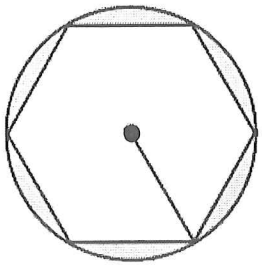
31. Find the area of the circle in terms of pi and the area of the shaded region to the nearest tenth.



area of the circle: _____

area of the shaded region:_____

32. The area of the circle is 1156π. Find the area of the shaded region. Round to the nearest tenth.



area of the shaded region: _____

33. The volume of a cone is 460π cm^2. The cone has a diameter of 20 cm. Find the slant height of the cone.

30.) 120 31.) 12π, $12\pi - 9\sqrt{3}$ 32.) $1156\pi - 1734\sqrt{3}$ 33.) 17

34. Identify an angle in Quadrant IV with a reference angle of 30°. Tell the measure of the angle in degrees.

35. Identify an angle in Quadrant III with a reference angle of 45° Tell the measure of the angle in degrees.

36. 135° is an angle whose sine and cosine are opposites. Tell the measure of the other angle whose sine and cosine are opposites in degrees.

37. If θ is in Quadrant I and $\sin\theta = \frac{1}{2}$, what other angle in a different quadrant will have the same sine?

38. a. If $\angle A$ is in Quadrant I and $\sin A = \frac{1}{2}$, identify $\angle B$ in Quadrant I that has an equivalent cosine in degrees.

b. If $\angle A$-*in Quadrant III and* $\sin A = -\frac{\sqrt{3}}{2}$, *identify* $\angle B$ *in Quadrant III that has an equivalent cosine in degrees.*

c.

34.) 330° 35.) 225° 36.) 315° 37.) 150 38.) $\angle B = 60°$
$\angle B = 210°$