

Unit 3 Part 2

1. Tell whether the three lengths are the sides of an acute triangle, a right triangle, or an obtuse triangle.

a. 8, 11, 12

b. 24, 45, 51

c. $\frac{3}{10}, \frac{2}{5}, \frac{1}{2}$

d. 12, 14, 20

e. 9, 11, 13

2. Which measurements best approximate the lengths of the legs, to the nearest tenth of a centimeter, of a right triangle if the hypotenuse is 70 cm and the shorter leg is one-third the length of the longer leg?

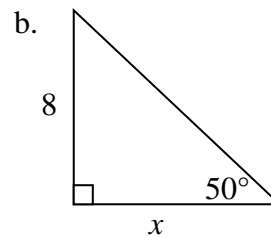
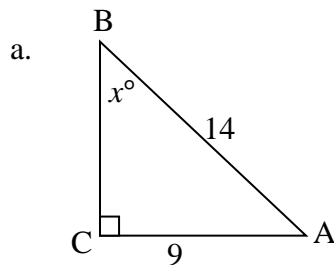
A. 16.8 cm and 50.4 cm

B. 22.1 cm and 66.4 cm

C. 24.4 cm and 73.1 cm

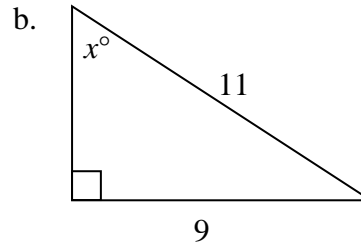
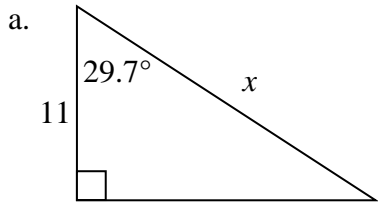
D. 26.7 cm and 80.3 cm

3. Solve for x . Round to the nearest tenths.



4. A 12 ft ladder is leaning against a house. The bottom of the ladder is 7 ft from the base of the house. Find the angle measure that the ladder makes with the ground? Round to the nearest tenth.

5. Solve for x . Round to the nearest tenth.



6. Given $\triangle ABC$ is a right triangle with right angle C, find an equivalent ratio for the following:

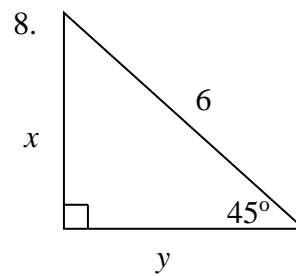
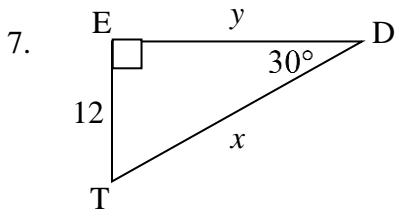
a. $\cos A$

b. $\cos B$

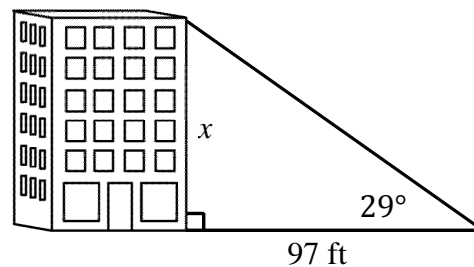
c. $\sin A$

d. $\sin B$

For questions 7 – 8, find the **EXACT** missing values.



9. Find the height of the building to the nearest tenth of a foot.



10. A 15 ft. ladder is leaning against a shed. The bottom of the ladder is 5.5 ft. from the bottom of the shed. What is the angle measure to the nearest degree that the ladder makes with the ground? Draw a picture.

11. If the hypotenuse of right triangle ABC is 41 cm with right angle C and $\sin A = \frac{40}{41}$, find the following:

a. $\cos A$ b. $\tan A$ c. $\sin B$

d. $\cos B$ e. $\tan B$

12. Suppose you know the measures of three parts of a triangle. Which combination of known sides and angles is NOT sufficient to let you use the Law of Sines to find other parts of the triangle?

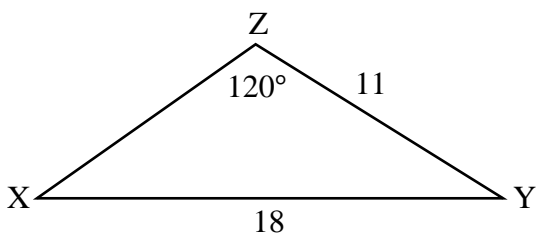
- A. the length of two sides and the measure of an angle opposite one of the sides
- B. the measures of three sides of the triangle
- C. the measures of two angles and the length of the side between the angles
- D. the measures of two angles and the length of a side that is not between the angles.

13. In which case would the Law of Cosines **most easily** be used?

- A. Two side lengths and the included angle measure are known.
- B. Two side lengths and the non-included angle measure are known.
- C. Two angle measures and the length of the included side are known.
- D. Two angle measures and the length of a non-included side are known.

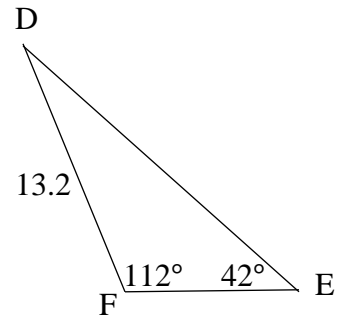
14. Given $\triangle ABC$, if $a = 10$, $b = 14$ and $c = 19$, find $m\angle A$. Round to the nearest tenth.

15. Solve for $m\angle X$. Round to the nearest tenth.



16. Consider triangle DEF at the right

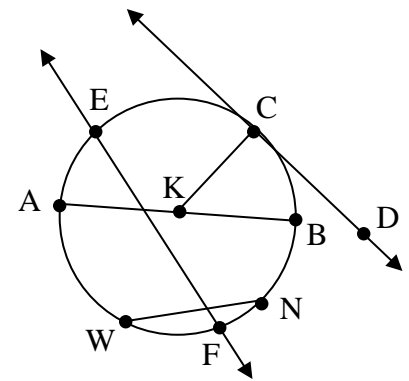
- Which law can you use to find another measurement, the Law of Sines or the Law of Cosines?
- Find DE.



Unit 4: Circles

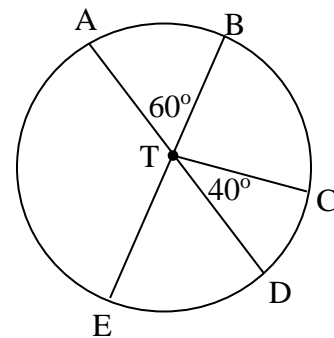
Name the vocabulary term that best describes each arc, point, segment, or line.

- | | |
|--------------------------|--------------------------|
| 1. K _____ | 2. \widehat{CEF} _____ |
| 3. \overline{KC} _____ | 4. \widehat{ACB} _____ |
| 5. \overline{AB} _____ | 6. \widehat{AW} _____ |
| 7. \overline{WN} _____ | 8. \overline{CD} _____ |



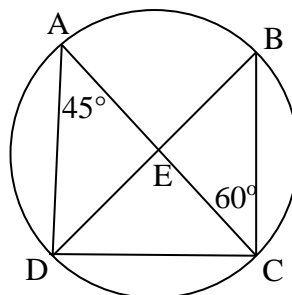
For questions 9 and 10, use the figure at the right.

- Name an arc with a measure of 220°.
- Find the measure of \widehat{BD} .



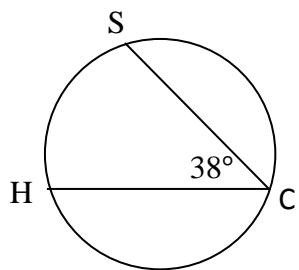
For questions 11 and 12, use the figure at the right.

- Find the measure of \widehat{AB} .

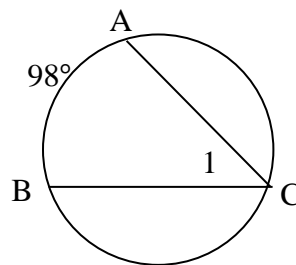


- Find the $m\angle DBC$.

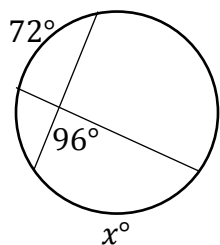
13. Find the measure of \widehat{SH} .



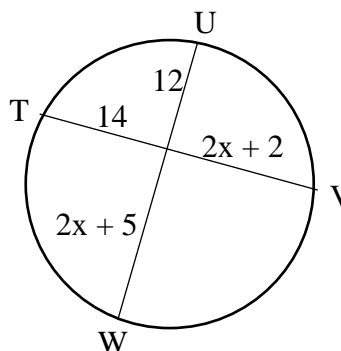
14. Find the $m\angle 1$.



15. Solve for x .

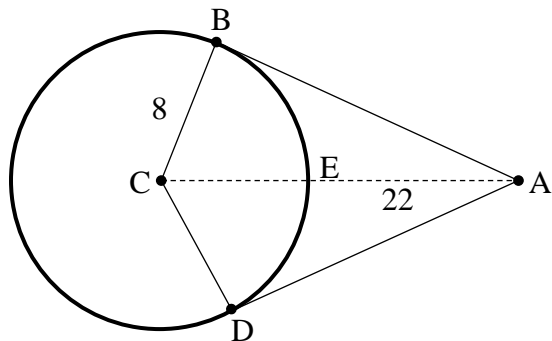


16. Find UW

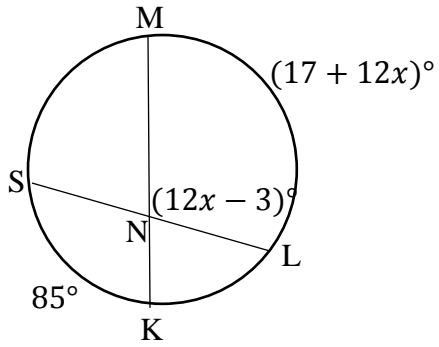


17. The length of a chord of a circle is 19 cm. The chord is 7 cm from the center of the circle. What is the length of the diameter of the circle? Round to the nearest tenth.

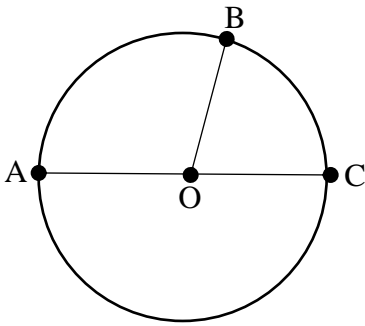
18. \overline{AB} and \overline{AD} are tangent to circle C. If $BC = 8$ and $EA = 22$, find the length of one of the tangent segments.



19. Solve for x .

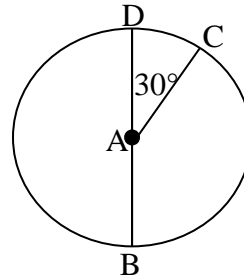


20. Given $\odot O$, where $m\widehat{AB} = 4x - 16$ and $m\widehat{BC} = 2x + 22$. Find $m\angle BOA$.



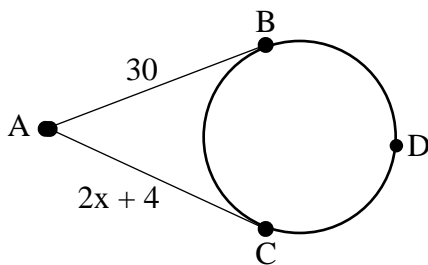
For questions 21 and 22, use the figure at the right.

21. Find the measure of \widehat{CB} .

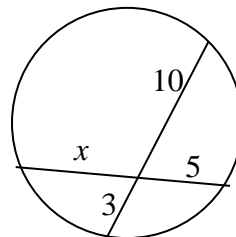


22. Find the length of \widehat{DC} given $AC = 4$.

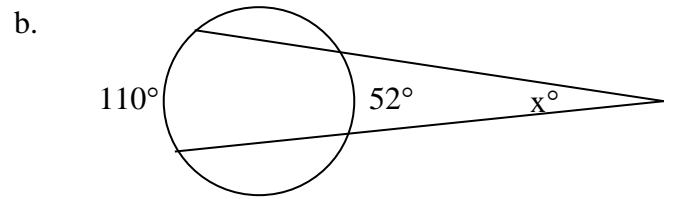
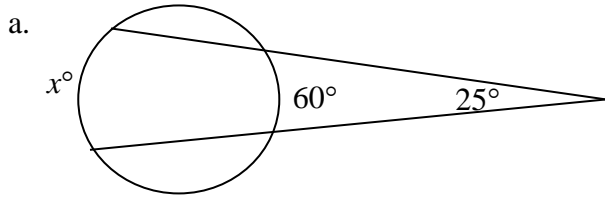
23. \overline{AB} and \overline{AC} are both tangent to the circle.



24. Solve for x .



25. Find the value of x for the following diagrams.



26. The length of the radius of a circle is 25cm, find the length of a chord that is 7 cm from the center.

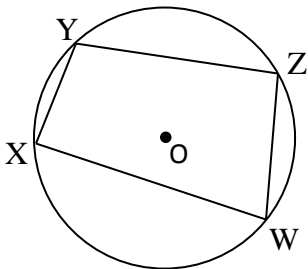
27. Write an equation of a circle with a center at $(2, 13)$ and a radius of 6.

28. For the equation you wrote above in question 27:

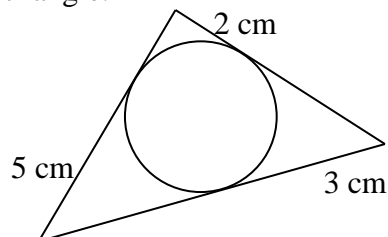
a. Is $(1, 4)$ on the circle?

b. Is $(2, 7)$ on the circle?

29. Find the $m\angle X$ and $m\angle Y$ if the $m\angle W = 82^\circ$ and $m\angle Z = 108^\circ$.



30. Find the perimeter of the triangle.



Find the equation, center and radius for each circle described below:

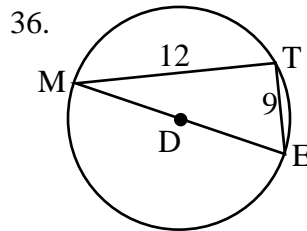
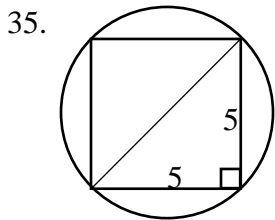
31. Diameter endpoints $(-2, 5)$ and $(4, -3)$.

32. Center $(2, 4)$ contains point $(-1, 9)$

33. $x^2 + 4x + y^2 - 10y + 28 = 0$

34. $x^2 - 12x + y^2 + 4y - 104 = 0$

For #35 – 36, find the EXACT circumference of each circle

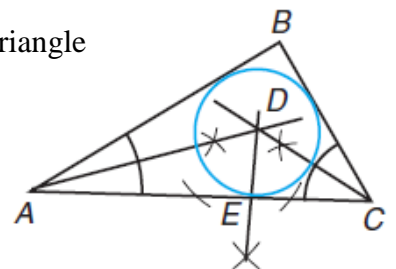


37. Jack uses a compass and a straightedge to construct the perpendicular bisectors of the sides of a triangle. Describes if the three lines meet inside, outside, on the triangle or do not meet for each triangle:

a. Obtuse triangle

b. Acute triangle

38. In the construction, the intersection of the _____ of a triangle is the center of the _____ circle.



39. The steps for constructing the inscribed circle of a triangle are shown, but in the wrong order. Put them in the correct order.

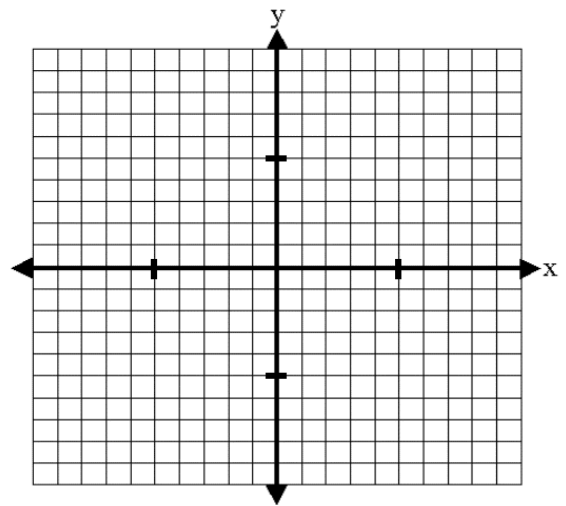
- A. Use the distance from the incenter to point X as the radius, and draw the circle.
- B. Construct the bisectors of two angles of the triangle.
- C. Mark the incenter at the point of intersection
- D. Construct a perpendicular line from the incenter to one side of the triangle. Label this point X.

Step 1: _____ Step 2: _____ Step 3: _____ Step 4: _____

40. What are the coordinates of the point that lies $\frac{3}{8}$ of the way along the directed line segment from $(-5, 9)$ to $(-1, -7)$?

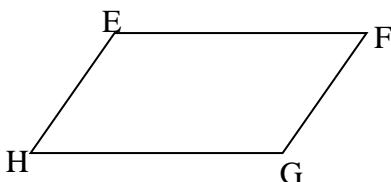
41. Point P lies along the directed line segment from $X(2, -3)$ to $Y(10, 1)$. Point P partitions the segment into a ratio of 3:1. Find the coordinates of P.

42. What is the equation of the circle that includes the points $(-9, 2)$, $(-5, 6)$, and $(-1, 8)$?



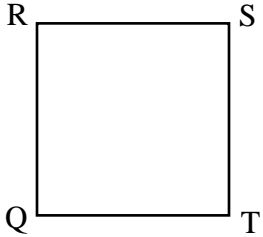
Unit 5: Area, Surface Area, and Volume

1. If $m\angle EHG = 45^\circ$, $FG = 9$ and $HG = 7$, find the area of parallelogram EFGH.



2. If ABCD is a rectangle and $CD = 3$, and $BC = 6$, what is the area of rectangle ABCD?

3. Given the diagonal of square QRST is 14 cm, find the area.

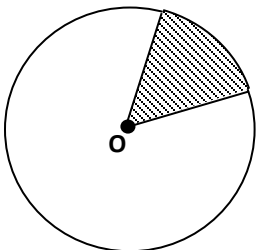


4. Given the number of sides of a regular polygon is 9, find the measure of each exterior and interior angle.

5. If each exterior angle of a regular polygon is 24° , determine the name of the polygon AND then find the measure of each interior angle.

6. A regular polygon has interior angles that each measure 144° . What is the name of this polygon?

7. Determine the area of the shaded sector with central angle of 62° and a radius of 3 cm. THEN find the area of the rest of the circle that remains after that sector got cut out. Leave answers in terms of π .



Convert each angle from radians to degrees or degrees to radians.

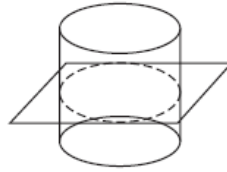
8. 37°

9. 150°

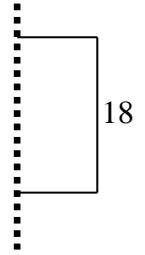
10. $\frac{4\pi}{3}$

11. $\frac{5\pi}{6}$

12. Identify the horizontal cross section of the cylinder.



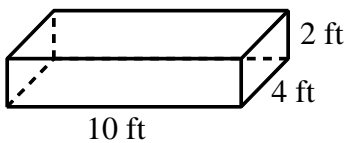
13. What solid would be generated by rotating the figure around the dashed line?
If the sides of the rectangle are 10 cm and 18 cm, what would be the diameter of the base?



14. In a right triangular prism, describe which polygon would be the cross section made perpendicular to the base.

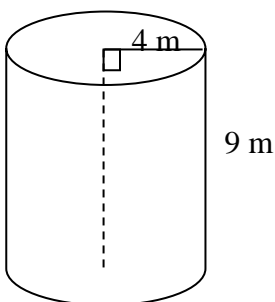
15. Find the area of a circle with a diameter of 12.4 yards. Round to the nearest hundredth.

16. Find the surface area and volume. Round to the nearest hundredth.



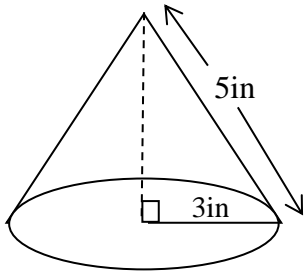
17. The volume of a rectangular prism is $48,576 \text{ cm}^3$. If the height of the prism is 24 cm and the width is 23 cm, find the length of the prism.

18. Find the surface area and volume. Leave answer in terms of π .



19. The area of the base of a pyramid is 50ft^2 and the height is 6 ft. Find the volume.

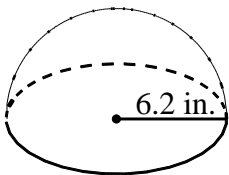
20. Find the area of the cross section that is perpendicular to the base and includes the vertex. Find the surface area and volume. Round to the nearest hundredth.



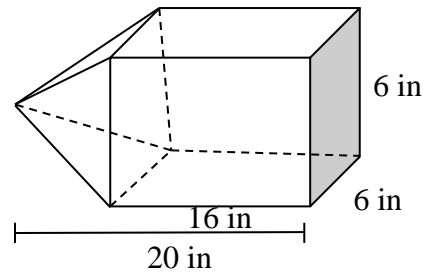
21. Determine the surface area and volume of a sphere whose diameter is 6 inches. Round to the nearest tenth.

22. Determine the surface area and volume of a sphere whose circumference of the great circle is 40π cm. Leave answer in terms of π .

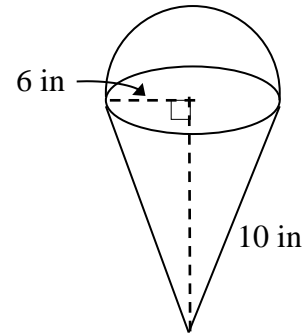
23. Find the volume of the hemisphere. Round your answer to the nearest tenth.



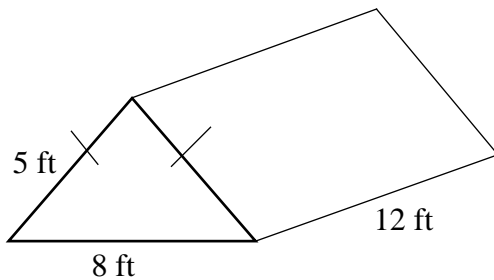
24. Find the volume. Round your answer to the nearest tenth.



25. Find the surface area and volume. Leave your answer in terms of π .



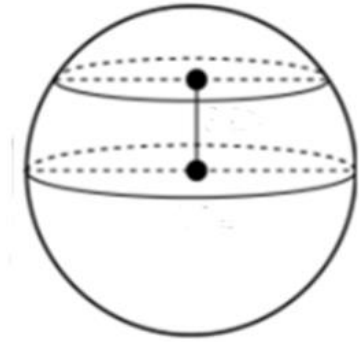
26. Find the surface area of the prism.



27. An athletic trainer is using a cylindrical pitcher that is 18 inches tall and has a diameter of 8 inches to fill a cooler with water. To the nearest tenth, how many pitchers of water will it take to fill the cooler if its volume is 9,050 cubic inches?

28. If the length of each edge of a rectangular prism is increased by a factor of 8, what factor will the volume increase by?

29. For a math project, Tim is making a globe using a Styrofoam sphere. The diameter of the sphere is 30 cm. To represent Pi Day, Tim is writing the numbers of pi around the sphere at a distance of 12 cm from the center. To the nearest tenth of a centimeter, how long does the circle of numbers need to be?



30. What is the volume of a square pyramid with a slant height of 18 and a base length of 18?
31. A cone is solid aluminum. The circumference of the cone is 20 cm, the height is 6 cm, and the mass of the cone is 170 g. To the nearest tenth of a unit, what is the density of the aluminum used to make the cone?
32. Did you make your notecard? Do you have pencils and your calculator ready for test day?

Get a good night's sleep the night before, stretch in the morning, eat breakfast, give yourself plenty of time to get to school and classes.

GOOD LUCK!!!!!! ☺