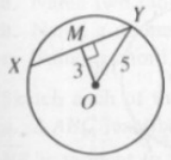
HW 12.4

Pg. 347 (WE): # 1-14, 17-22 and Pg. 349 (S-T-1): #1-3

Written Exercises

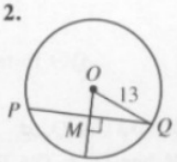
In the diagrams that follow, O is the center of the circle.

1.



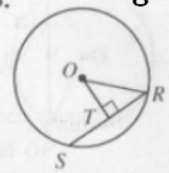
$XY = \underline{?}$

2.



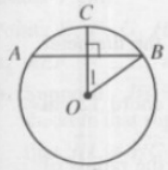
$PQ = 24$; $OM = \underline{?}$

3.



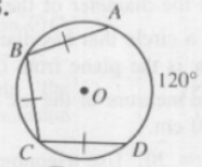
$OT = 9$; $RS = 18$
$OR = \underline{?}$

4.



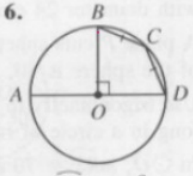
$m\overset{\frown}{ACB} = 110$;
$m\angle 1 = \underline{?}$

5.



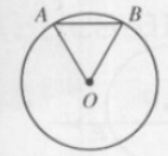
$m\overset{\frown}{BC} = \underline{?}$

6.



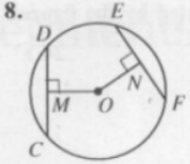
$m\overset{\frown}{CD} = \underline{?}$

7.



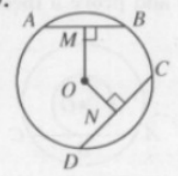
$m\angle AOB = 60$;
$AB = 24$; $OA = \underline{?}$

8.



$OM = ON = 7$;
$CM = 6$; $EF = \underline{?}$

9.



$AB = 18$; $OM = 12$;
$ON = 10$; $CD = \underline{?}$

10. Sketch a circle with two noncongruent chords. Is the longer chord farther from the center or closer to the center than the shorter chord?

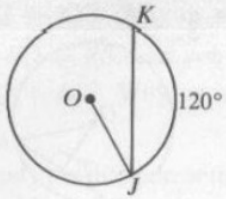
11. Sketch a circle O with radius 10 and chord $\overline{XY}$ 8 cm long. How far is the chord from O?

12. Sketch a circle Q with a chord $\overline{RS}$ that is 16 cm long and 2 cm from Q. What is the radius of $\odot Q$?

13. Sketch a circle P with radius 5 cm and chord $\overline{AB}$ that is 2 cm from P. Find the length of $\overline{AB}$.

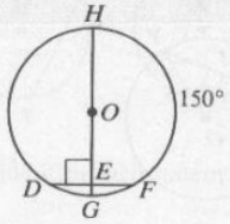
14. Given: $\overset{\frown}{JZ} \cong \overset{\frown}{KZ}$
Prove: $\angle J \cong \angle K$

17.



If $OJ = 10$, $JK = \underline{?}$.

18.



If $OE = 8\sqrt{3}$, $HG = \underline{?}$.

19. A plane 5 cm from the center of a sphere intersects the sphere in a circle with diameter 24 cm. Find the diameter of the sphere.

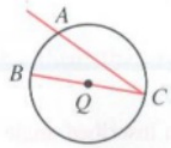
20. A plane P cuts sphere O in a circle that has diameter 20. If the diameter of the sphere is 30, how far is the plane from O?

21. Use trigonometry to find the measure of the arc cut off by a chord 12 cm long in a circle of radius 10 cm.

22. In $\odot O$, $m\overset{\frown}{RS} = 70$ and $RS = 20$. Use trigonometry to find the radius of $\odot O$.

Self-Test 1

1. Points A, B, and C lie on $\odot Q$.

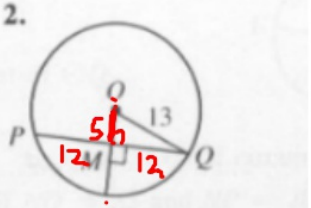


a. Name two radii of $\odot Q$.
b. Name a diameter of $\odot Q$.
c. Name a chord and a secant of $\odot Q$.

2. Sketch each of the following.
a. $\triangle ABC$ inscribed in $\odot O$ **b.** Quad. $LUMX$ circumscribed about $\odot Q$

3. $\overline{NP}$ is tangent to $\odot O$ at P. If $NO = 25$ and $NP = 20$, find OP.

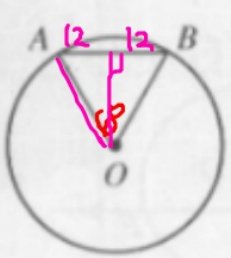
2.



$PQ = 24$; $OM =$ 5

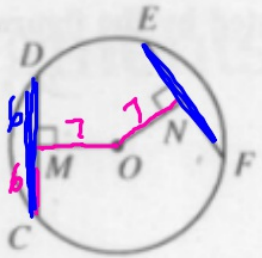
60

7.



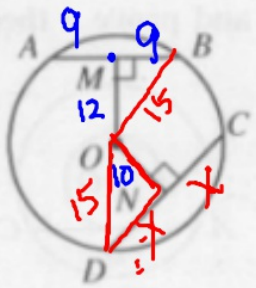
$m\angle AOB = 60$; 24
$AB = 24$; $OA =$?

8.



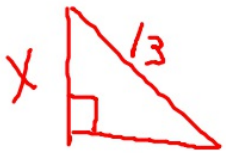
$OM = ON = 7$; 12
$CM = 6$; $EF =$

9.



$AB = 18$; $OM = 12$;
$ON = 10$; $CD =$?

$10\sqrt{5}$

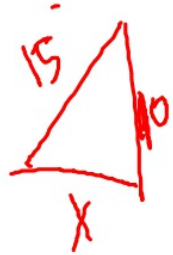


$X^2 + 12^2 = 13^2$

$X^2 + 144 = 169$

-144

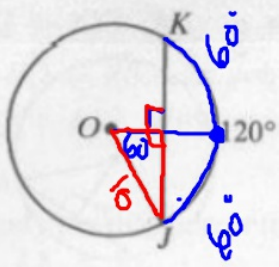
$X^2 = 25$



$X^2 + 100 = 225$

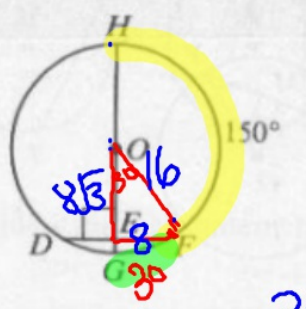
$\sqrt{X^2} = \sqrt{125} = 5\sqrt{5}$

17.

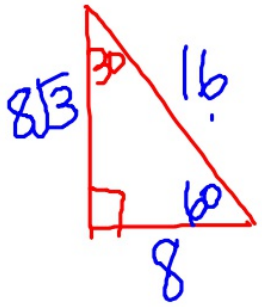


If $OJ = 10$, $JK =$ $10\sqrt{3}$

18.



If $OE = 8\sqrt{3}$, $HG =$ 32



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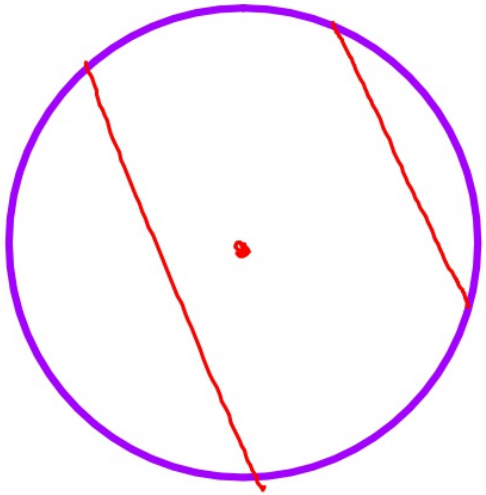
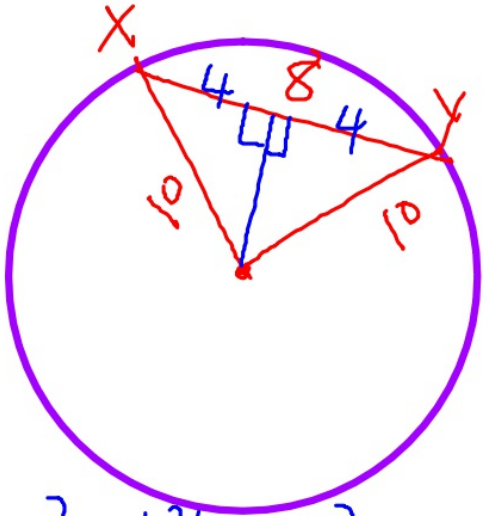
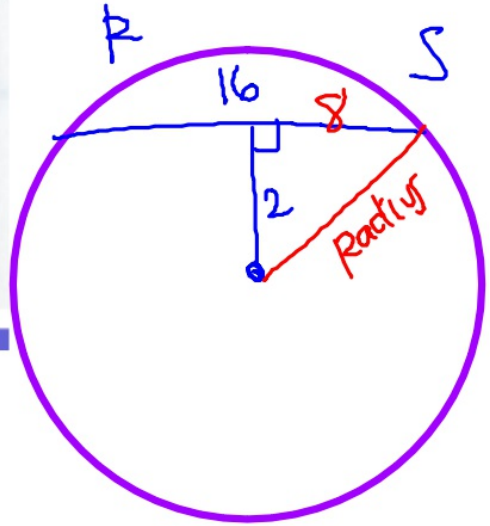


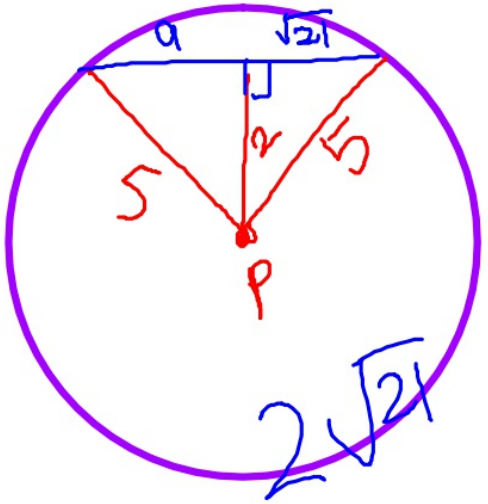


$a^2 + 4^2 = 10^2$

$a^2 = 100 - 16$

$a = \sqrt{84}$





$2\sqrt{21}$