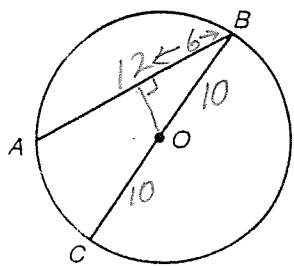


KEY

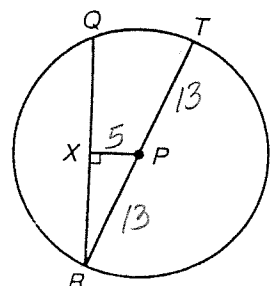
Geometry (H)
Section 9.4 – Arcs and Chords

1. If $AB = 12$ and $BC = 20$, find the distance from O to \overline{AB} .



Distance from
O to AB = 8

2. If $RT = 26$ and $PX = 5$, find QR .



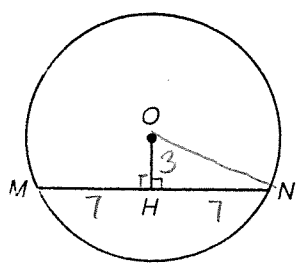
$$5^2 + (XR)^2 = 13^2$$

$$(XR)^2 = 144$$

$$XR = 12$$

QR = 24

3. If $MN = 14$ and $OH = 3$, then find the radius of the circle.



$$3^2 + 7^2 = ON^2$$

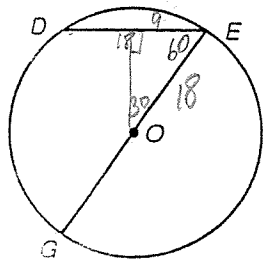
$$9 + 49 = ON^2$$

$$58 = ON^2$$

$$\sqrt{58} = ON$$

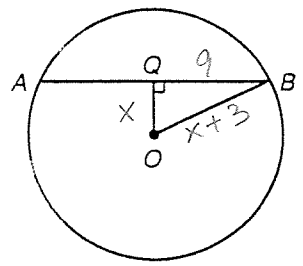
Radius = $\sqrt{58}$

4. If $DE = 18$ and $m\angle DEG = 60^\circ$, then find GE .



GE = 36

5. If $OB = x + 3$, $QO = x$ and $AB = 18$, then find the diameter.



$$x^2 + 9^2 = (x + 3)^2$$

$$x^2 + 81 = x^2 + 6x + 9$$

$$81 = 6x + 9$$

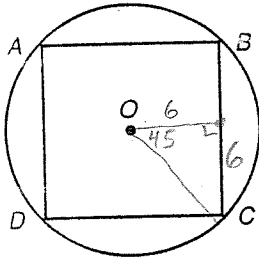
$$72 = 6x$$

$$12 = x$$

$$2(12 + 3) = 30$$

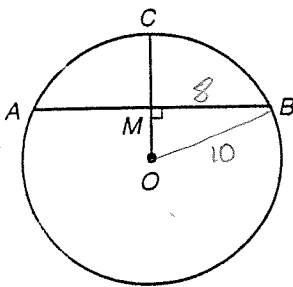
Diameter = 30

6. ABCD is a square. BC = 12. Find the radius of the circle.



Radius = $6\sqrt{2}$

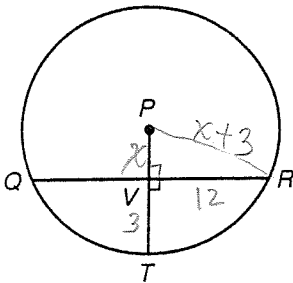
7. If AB = 16 and OC = 10, then find MC



$OM = 6$
 $10 - 6 = MC$
 $4 = MC$

MC = 4

8. IF VT = 3 and QR = 24, find the radius of the circle.

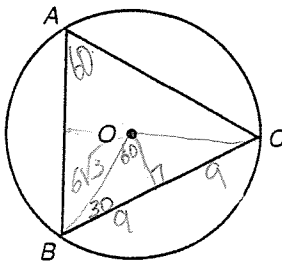


$x^2 + 12^2 = (x+3)^2$
 $x^2 + 144 = x^2 + 6x + 9$
 $135 = 6x$
 $\frac{135}{6} = x$

Radius = $\frac{135}{6}$

9. ΔABC is equilateral. The perimeter of ΔABC is 54. Find the diameter of the circle.

Ask ST: how do you know each side divided by 3 is 30°?



$3 \overline{) 54}$

$x\sqrt{3} = 9$

$x = \frac{9}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{9\sqrt{3}}{3} = 3\sqrt{3}$

Diameter = $12\sqrt{3}$

Thm: \cong Chords equally distant from center