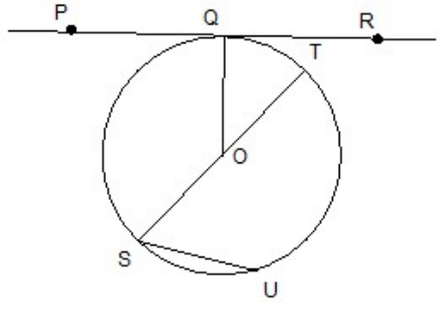
## Section 8.1 & 8.2 Review

**Multiple Choice**

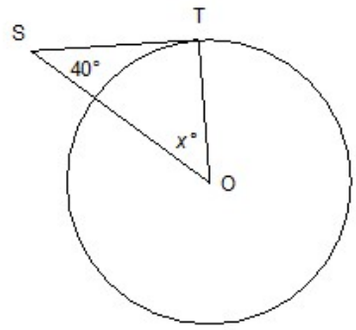
*Identify the choice that best completes the statement or answers the question.*

_____ 1. O is the centre of this circle.
Which line is a tangent?




a. OQ b. ST c. PR d. SU

2. O is the centre of this circle and point T is a point of tangency.
Determine the value of $x°$.

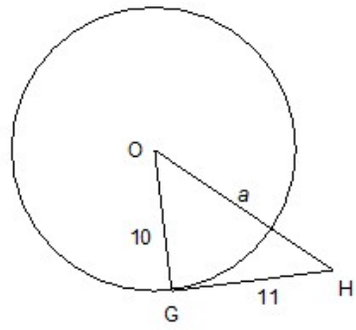



$\angle OTS = 90°$ (TangP)

$x° = 50°$ (SATT)

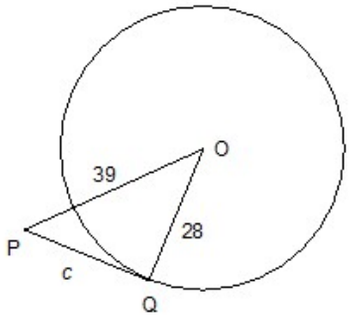
a. 90° b. 50° c. 130° d. 40°

_____ 3. O is the centre of this circle and point G is a point of tangency.
Determine the value of $a$. If necessary, give your answer to the nearest tenth.



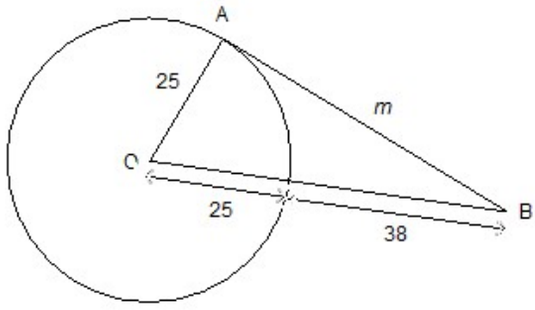

a. 11.3 b. 22.5 c. 4.6 d. 14.9

4. O is the centre of this circle and point Q is a point of tangency.
Determine the value of $c$. If necessary, give your answer to the nearest tenth.



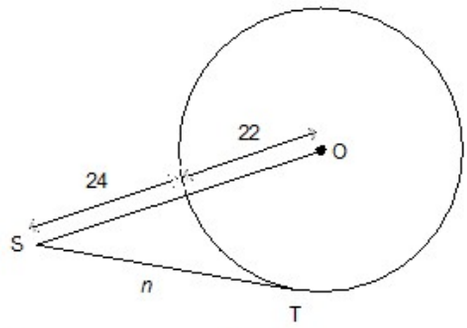

a. 48 b. 27.1 c. 11 d. 5.5

5. O is the centre of this circle and point A is a point of tangency.
Determine the value of $m$. If necessary, give your answer to the nearest tenth.



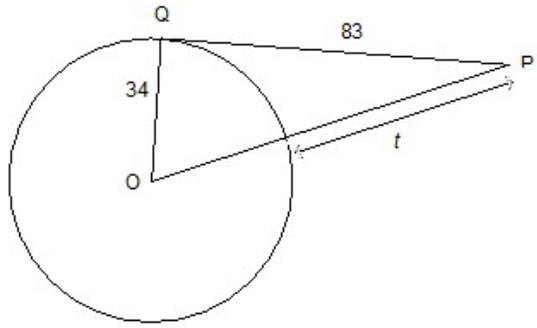

a. 38 b. 7.2 c. 67.8 d. 57.8

6. O is the centre of this circle and point T is a point of tangency.
Determine the value of $n$. If necessary, give your answer to the nearest tenth.



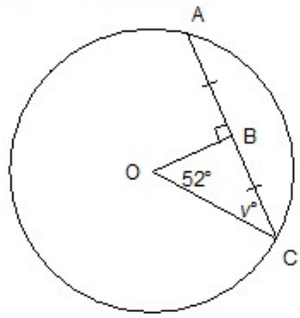

a. 5.7 b. 51 c. 24 d. 40.4

7. O is the centre of this circle and point Q is a point of tangency.
Determine the value of $t$. If necessary, give your answer to the nearest tenth.




a. 61.3 b. 55.7 c. 55 d. 82.2

8. O is the centre of the circle. Determine the value of $v°$.




a. 19° b. 71° c. 52° d. 38°

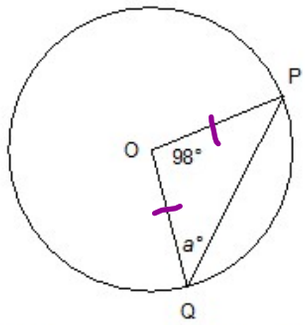
$\angle OBC = \angle OBA = 90°$ (chP)

$AB = BC = \#$ (chP)

$OC = OA$ (radii)

$y = 38°$ (SA ∠)

9. O is the centre of the circle.
Determine the value of $a°$.



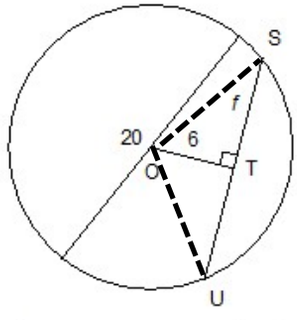

a. 49° b. 20.5° c. 41° d. 69.5°

OP = OQ (radii)

$a° = \frac{180 - 98}{2}$

$a° = 41°$ (I bt)

10. O is the centre of the circle.
Determine the value of $f$ to the nearest tenth, if necessary.

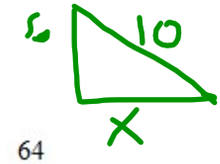



a. 4 b. 8 c. 64 d. 11.7

OU = OS = 10 (radii)

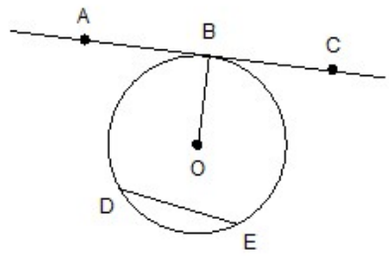
∠OTS = ∠OTU = 90° (chp)

UT = ST = ___ (chp)

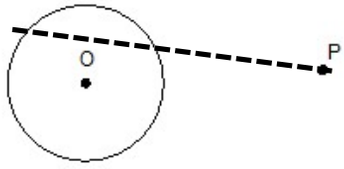


**Short Answer**

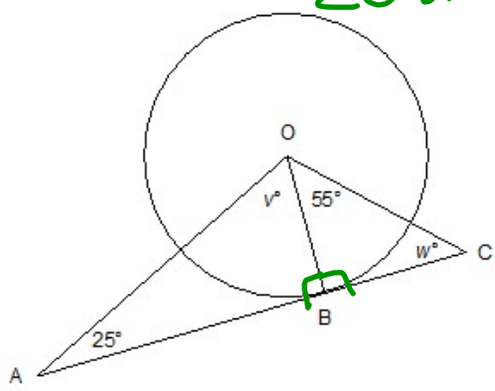
11. O is the centre of this circle.
Which line is a tangent?



12. Draw a line through point P that is NOT a tangent to the circle.



13. O is the centre of this circle and point B is a point of tangency.
Determine the values of $v°$ and $w°$.

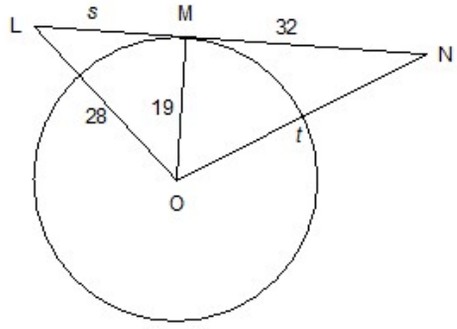



$\angle OBA = \angle OBC = 90°$ (Tang P)

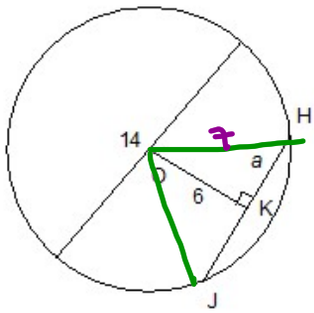
$W = 35°$ (SATT)

$V = 65°$ (SATT)

14. O is the centre of this circle and point Q is a point of tangency.
Determine the values of $s$ and $t$. If necessary, give your answers to the nearest tenth.



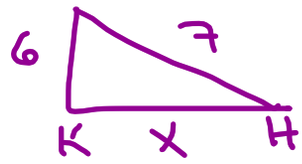
15. Point O is the centre of this circle. Without solving for $a$, sketch and label the length of any extra line segments you need to draw to determine the value of $a$.




$OH = OJ = 7$ (radii)

$\angle OKH = \angle OKJ = 90°$ (chP)

$HK = JK =$ ___ (chP)



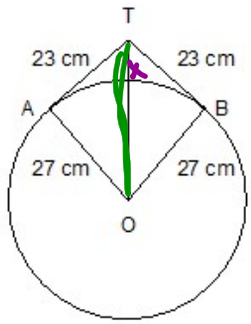

$a^2 = c^2 - b^2$

$a^2 = 7^2 - 6^2$

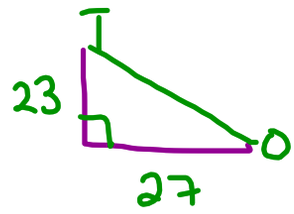
$a^2 = 49 -$

**Problem**

16. A circular mirror with radius 27 cm hangs from a hook.
The wire is 46 cm long and is a tangent to the circle at points A and B.
How far, to the nearest tenth, above the top of the mirror is the hook?




$\angle OBT = \angle OAT = 90^\circ$ (Tang rad)




$c^2 = a^2 + b^2$

$c^2 = 27^2 + 23^2$

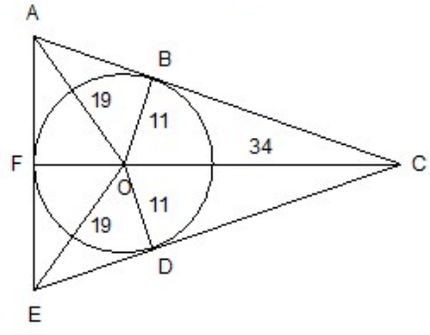
$c = 35.5$

$x = 35.5 - 27$

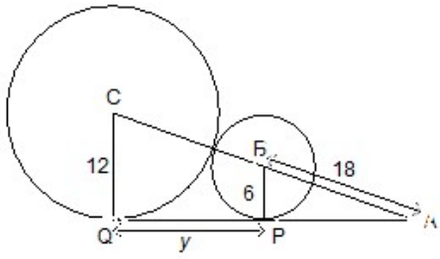
$x = 12.5$

17. When are two tangent lines to a circle parallel? Draw a sketch to support your answer.

18. AC, AE, and CE are tangents to this circle. The points of tangency are: B, F, and D
The circle has radius 11. The distance from the centre of the circle to each vertex of the triangle is: OC = 34, OA = OE = 19
Determine the side lengths of $\triangle ACE$, to the nearest tenth.



19. AQ is a tangent to the circle with centre B and to the circle with centre C.
The points of tangency are P and Q.
Determine the value of $y$ to the nearest tenth.



20. A circle has diameter 32 cm. How far from the centre of the circle, to the nearest centimetre, is a chord 20 cm long?