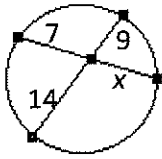


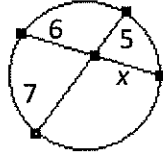
Worksheet 12-4 Part B Special Segments in Circles

Chords, secants, and tangents are shown, find x .

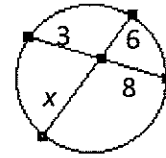
1. 18



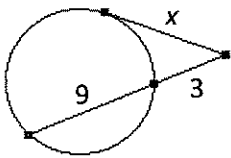
2. 5.8



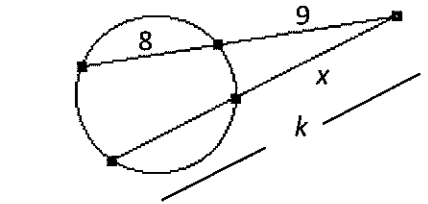
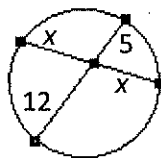
3. 4



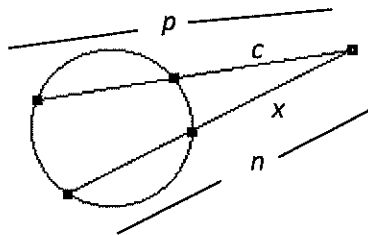
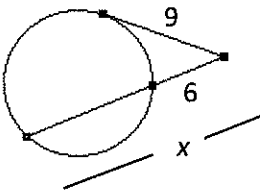
4. 6



5. 7.7 ~~X~~



7. 7.5 ~~X~~



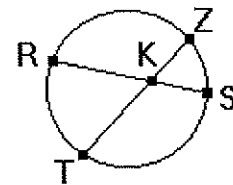
In 9–12, Given: chords \overline{RS} and \overline{TZ} intersect at K .

$TK = \underline{3, 4}$ 9. $RK = 6, KS = 2, TZ = 7$, find TK .

$RK = \underline{4}$ 10. $RS = 8, TK = 8, KZ = 2$, find RK .

$KZ = \underline{4, 10}$ 11. $RK = 8, RS = 13, TZ = 14$, find KZ .

$TZ = \underline{14.8}$ 12. $RK = 8, KS = 6, TK = 10$, find TZ .



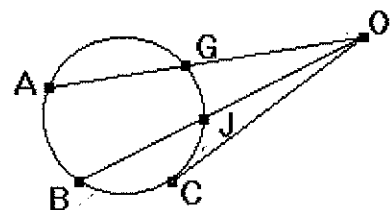
In 13–16, secants \overline{OA} and \overline{OB} and tangent \overline{OC} are drawn from point O .

$BJ = \underline{5}$ 13. $OJ = 4, OC = 6$, find BJ .

$OJ = \underline{3}$ 14. $OG = 4, GA = 8, JB = 13$, find OJ .

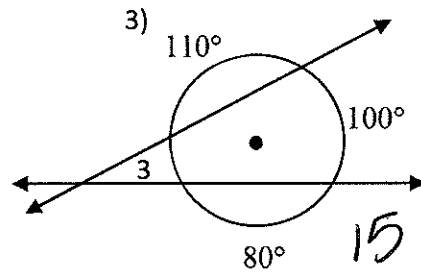
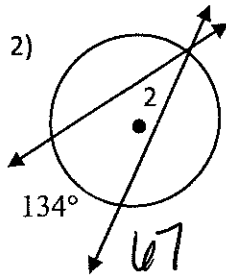
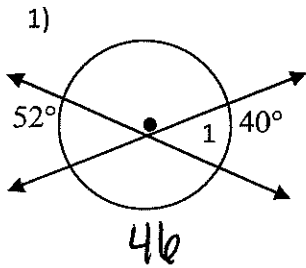
$OA = \underline{20}$ 15. $OJ = 5, JB = 11, GA = 16$, find OA .

$OC = \underline{7.3}$ 16. $JB = 5, OJ = 3\sqrt{3}$, find OC .

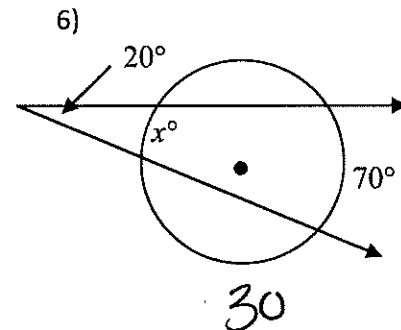
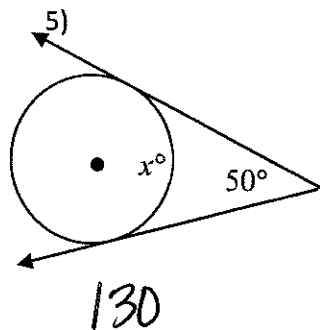
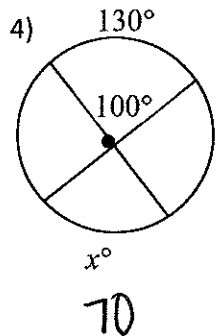


Worksheet 12-4A Measurement of Angles

Find the measure of each numbered angle.



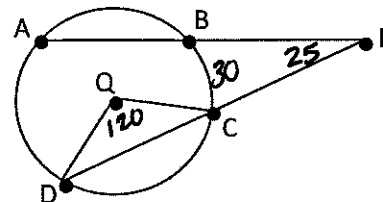
Find the value of x .



Assume that lines that appear to be tangents are tangents. In $\odot Q$, $m\angle CQD = 120^\circ$, $m\angle BC = 30^\circ$, and $m\angle BEC = 25^\circ$. Find each measure.

7) $m\angle DC = 120$

8) $m\angle AD = 80$



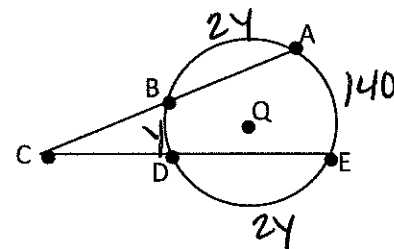
9) $m\angle AB = 130$

10) $m\angle QDC = 30$

In $\odot Q$, $m\angle AE = 140^\circ$, $m\angle BD = y^\circ$, $m\angle AB = 2y^\circ$, and $m\angle DE = 2y^\circ$. Find each measure.

11) $m\angle BD = 44$

12) $m\angle AB = 88$



13) $m\angle DE = 88$

14) $m\angle BCD = 48$

In $\odot P$, $m\angle BC = 4x - 50$, $m\angle DE = x + 25$, $m\angle EF = x - 15$, $m\angle FB = 50$, and $m\angle CD = x$. Find each measure.

15) $m\angle A = 50$

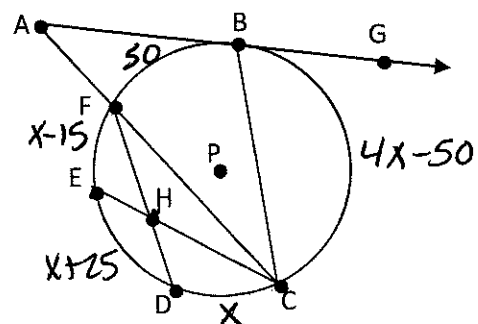
16) $m\angle BCA = 25$

17) $m\angle ABC = 105$

18) $m\angle GBC = 75$

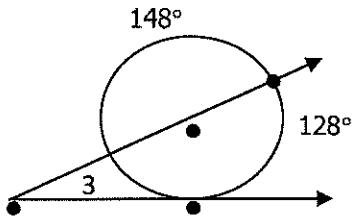
19) $m\angle FHE = 42.5$

20) $m\angle CFD = 25$

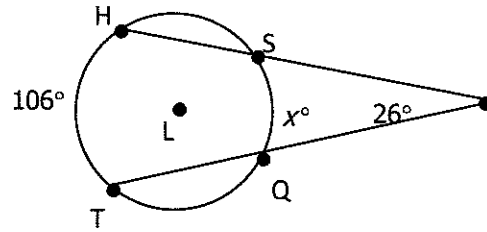


Use the diagram to find the missing information.

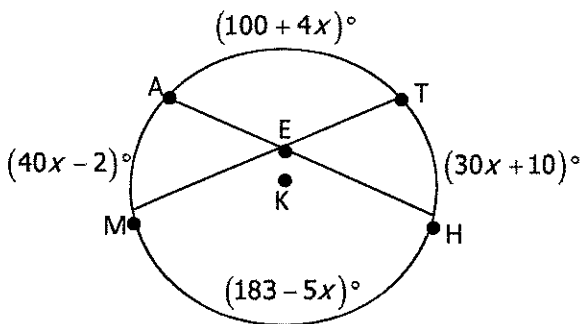
21) Find $m\angle 3 = 22$



22) Find the value of x. 54



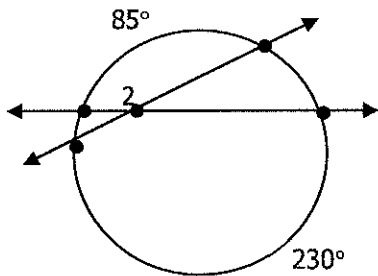
23) Find the value of x and $m\angle AET$.



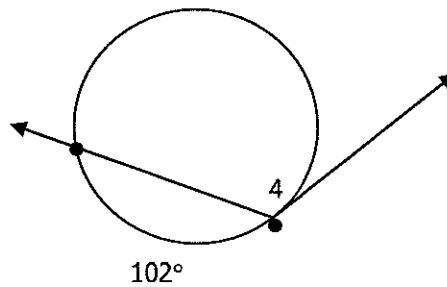
$x = 1$

141

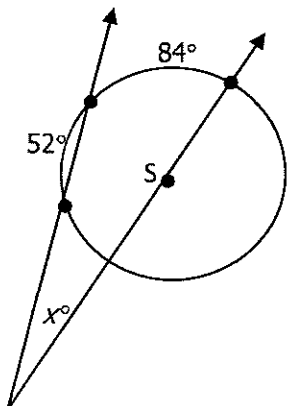
25) Find $m\angle 2, 157.5$



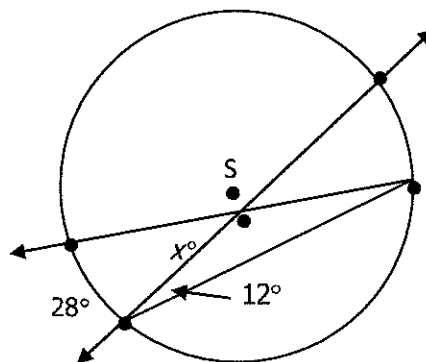
26) Find $m\angle 4. 129$



27) Find the value of x. 20

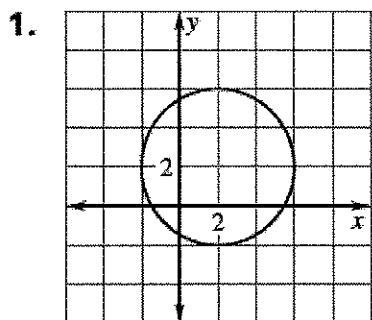


28) Find the value of x. 26

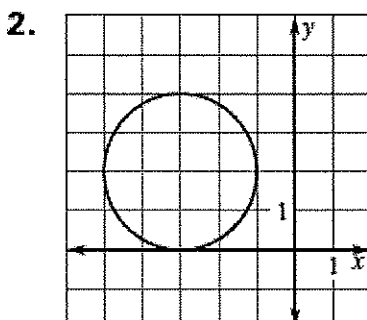


Worksheet 11-4 Graphing Circles on a Coordinate Plane

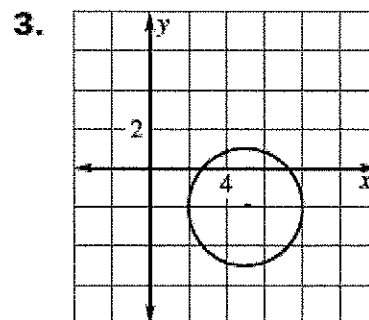
Write the standard equation of the circle.



$$(x-2)^2 + (y-2)^2 = 4$$



$$(x+3)^2 + (y-2)^2 = 4$$



$$(x-2.5)^2 + (y+1)^2 = 4$$

Write the standard equation of the circle with the given center and radius.

5. Center (0, 0), radius 9 $x^2 + y^2 = 81$

6. Center (1, 3), radius 4 $(x-1)^2 + (y-3)^2 = 16$

7. Center (-3, 0), radius 5 $(x+3)^2 + y^2 = 25$

8. Center (4, -7), radius 13 $(x-4)^2 + (y+7)^2 = 169$

9. Center (0, 14), radius 14 $x^2 + (y-14)^2 = 196$

10. Center (-12, 7), radius 6 $(x+12)^2 + (y-7)^2 = 36$

Use the given information to write the standard equation of the circle.

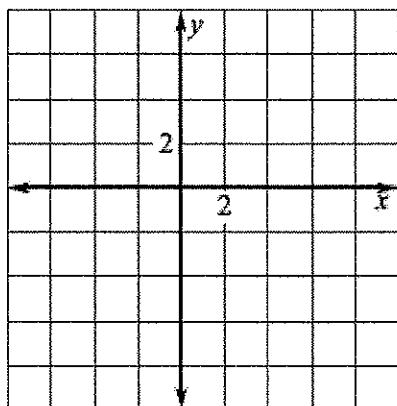
8. The center is (1, 3), and a point on the circle is (-4, 15). $(x-1)^2 + (y-3)^2 = 169$

9. The center is (-5, -2), and a point on the circle is (7, 14). $(x+5)^2 + (y+2)^2 = 400$

10. The center is (-1, 2), and a point on the circle is (47, 16). $(x+1)^2 + (y-2)^2 = 2500$

Graph the equation.

11. ~~$(x-3)^2 + (y+4)^2 = 16$~~



12. ~~$(x+5)^2 + (y-7)^2 = 25$~~

