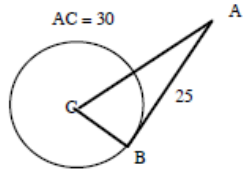
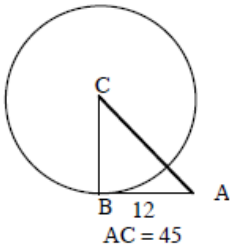
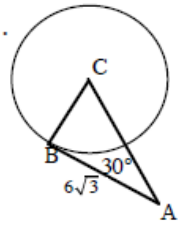
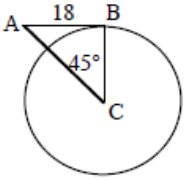
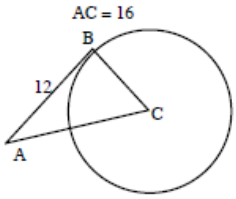
In each circle, C is the center and $\overline{AB}$ is tangent to the circle at point B. Find the area of each circle.

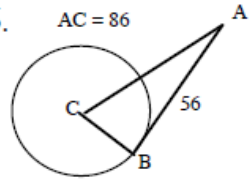
1. 

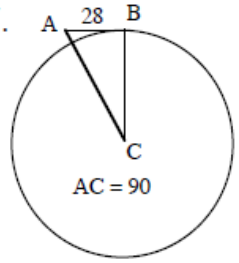
2. 

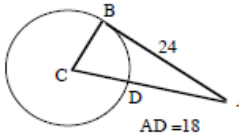
3. 

4. 

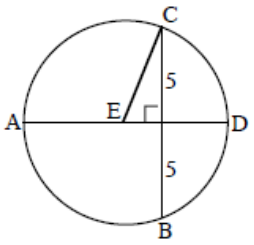
5. 

6. 

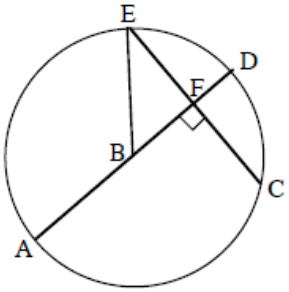
7. 

8. 

9. In the figure at right, point E is the center and $m\angle CED = 55°$. What is the area of the circle?



In the following problems, B is the center of the circle. Find the length of $\overline{BF}$ given the lengths below.



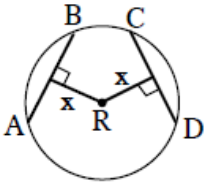
10. EC = 14, AB = 16

11. EC = 35, AB = 21

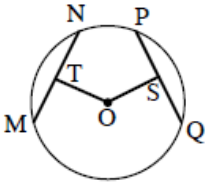
12. FD = 5, EF = 10

13. EF = 9, FD = 6

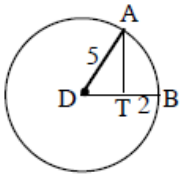
14. In ⊙R, if $AB = 2x - 7$ and $CD = 5x - 22$, find x.



15. In ⊙O, $\overline{MN} \cong \overline{PQ}$, $MN = 7x + 13$, and $PQ = 10x - 8$. Find PS.



16. In ⊙D, if AD = 5 and TB = 2, find AT.

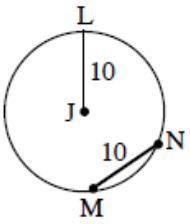


Answers

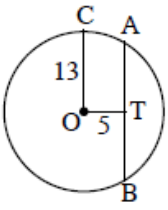
Answers

1. 275π sq. un.
2. 1881π sq. un.
3. 36π sq. un.
4. 324π sq. un.
5. 112π sq. un.
6. 4260π sq. un.
7. 7316π sq. un.
8. 49π sq. un.
9. ≈ 117.047 sq. un.
10. ≈ 14.4
11. ≈ 11.6
12. ≈ 7.5
13. 3.75
14. 5
15. 31
16. 4

17. In ⊙J, radius JL and chord MN have lengths of 10 cm. Find the distance from J to $\overline{MN}$.

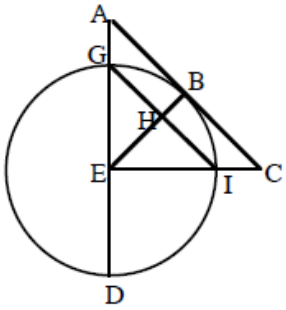


18. In ⊙O, OC = 13 and OT = 5. Find AB.

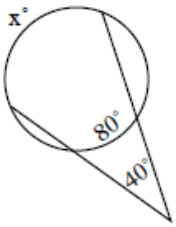


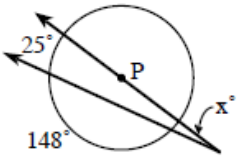
19. If $\overline{AC}$ is tangent to circle E and $\overline{EH} \perp \overline{GI}$, is $\Delta GEH \sim \Delta AEB$? Prove your answer.

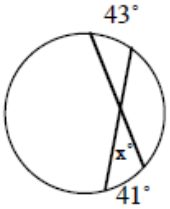
20. If $\overline{EH}$ bisects $\overline{GI}$ and $\overline{AC}$ is tangent to circle E at point B, are $\overline{AC}$ and $\overline{GI}$ parallel? Prove your answer.

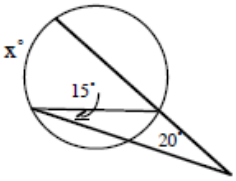


Find the value of x.

21. 

22. 

23. 

24. 

In ⊙F, $m\overset{\frown}{AB} = 84°$, $m\overset{\frown}{BC} = 38°$, $m\overset{\frown}{CD} = 64°$, $m\overset{\frown}{DE} = 60°$. Find the measure of each angle and arc.

25. $m\overset{\frown}{EA}$

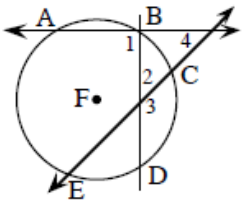
26. $m\overset{\frown}{AEB}$

27. $m\angle 1$

28. $m\angle 2$

29. $m\angle 3$

30. $m\angle 4$



Answers

16. 4

17. $5\sqrt{3}$ cm.

18. $5\sqrt{3}$

19. Yes, $\angle GEH \cong \angle AEB$ (reflexive). $\overline{EB}$ is perpendicular to $\overline{AC}$ since it is tangent so $\angle GHE \cong \angle ABE$ because all right angles are congruent. So the triangles are similar by AA~.

20. Yes. Since $\overline{EH}$ bisects $\overline{GI}$ it is also perpendicular to it (SSS). Since $\overline{AC}$ is a tangent, $\angle ABE$ is a right angle. So the lines are parallel since the corresponding angles are right angles and all right angles are equal.

21. 160

22. 9

23. 42

24. 70

25. 114

26. 276

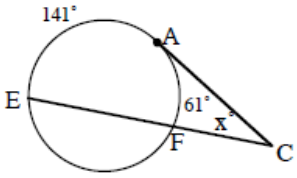
27. 87

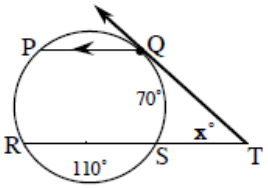
28. 49

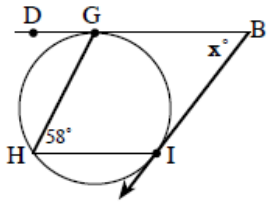
29. 131

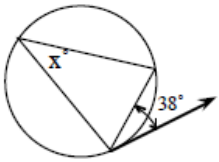
30. 38

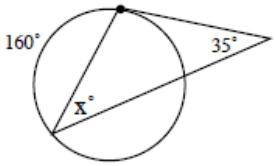
For each circle, tangent segments are shown. Use the measurements given find the value of x.

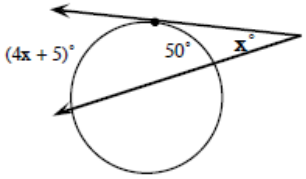
31. 

32. 

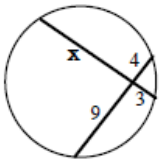
33. 

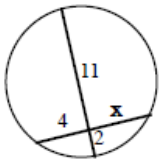
34. 

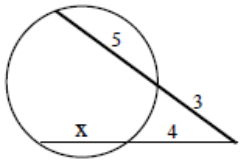
35. 

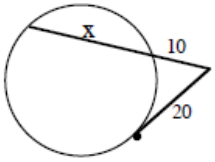
36. 

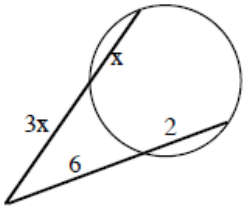
Find each value of x. Tangent segments are shown in problems 40, 43, 46, and 48.

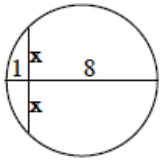
37. 

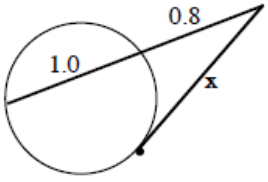
38. 

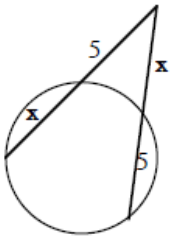
39. 

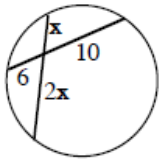
40. 

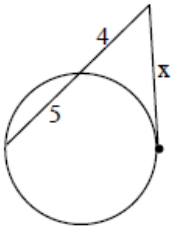
41. 

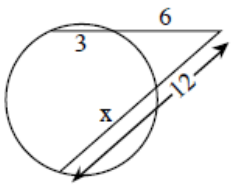
42. 

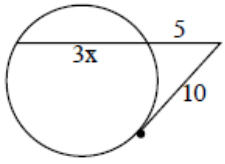
43. 

44. 

45. 

46. 

47. 

48. 

Answers

31. 40	32. 55	33. 64	34. 38	35. 45
36. 22.5	37. 12	38. $5\frac{1}{2}$	39. 2	40. 30
41. 2	42. $2\sqrt{2}$	43. 1.2	44. 5	45. $\sqrt{30}$
46. 6	47. 7.5	48. 5		