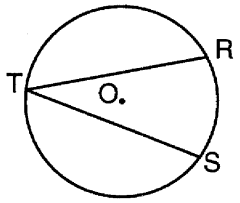
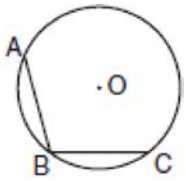
G.C.A.2: Chords, Secants and Tangents 12

1 In the accompanying diagram of circle O, the measure of $\overset{\frown}{RS}$ is 64°.



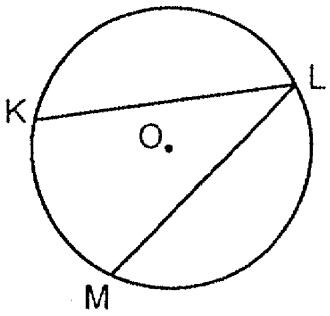
What is m$\angle RTS$?
1) 32
2) 64
3) 96
4) 128

2 In the accompanying diagram of circle O, m$\overset{\frown}{ABC}$ = 150.

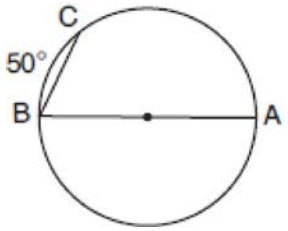


What is m$\angle ABC$?
1) 210
2) 105
3) 95
4) 75

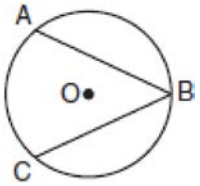
3 In the accompanying diagram of circle O, the measure of $\angle KLM$ is 38°. What is the number of degrees in the measure of $\overset{\frown}{KM}$?



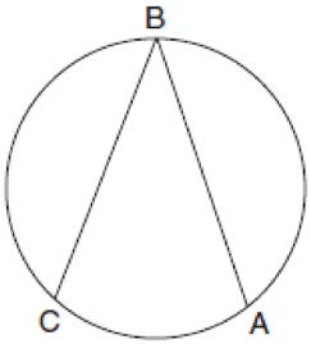
4 In the accompanying diagram, $\overline{BA}$ is a diameter and m$\overset{\frown}{BC}$ = 50. Find m$\angle CBA$.



5 In the accompanying diagram of circle O, m$\overset{\frown}{ABC}$ = 260. What is m$\angle ABC$?



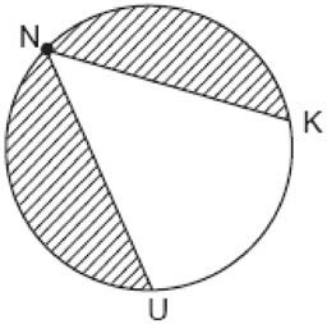
6 The new corporate logo created by the design engineers at Magic Motors is shown in the accompanying diagram.



If chords $\overline{BA}$ and $\overline{BC}$ are congruent and $m\overset{\frown}{BC} = 140$, what is $m\angle B$?

1) 40
2) 80
3) 140
4) 280

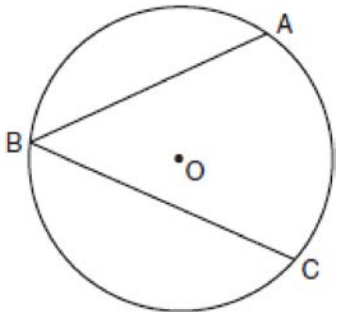
7 The NUK Energy Company is designing a new logo, as shown in the accompanying diagram, with $m\overset{\frown}{NK} = 130$ and $m\overset{\frown}{NK} = m\overset{\frown}{NU}$.



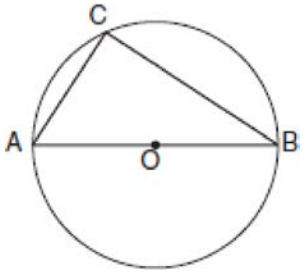
What is the measure of $\angle KNU$?

1) 50°
2) 65°
3) 80°
4) 100°

8 In the accompanying diagram of circle O, $m\angle ABC = 2x$ and $m\overset{\frown}{AC} = x + 60$. Find the value of x.



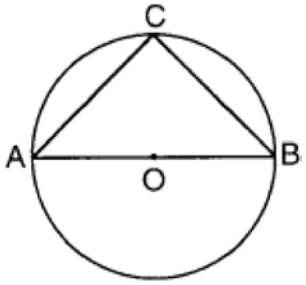
9 In the accompanying diagram, $\triangle ABC$ is inscribed in circle O and $\overline{AB}$ is a diameter.



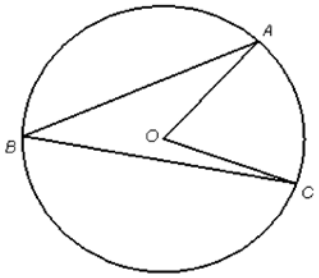
What is the number of degrees in $m\angle C$?

1) 30
2) 45
3) 60
4) 90

10 In the accompanying diagram, isosceles triangle ABC is inscribed in circle O with diameter $\overline{AOB}$. Find m$\angle CAB$.

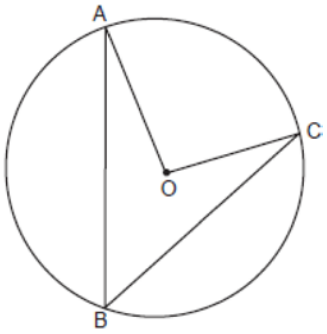


11 In the diagram below, circle O has m$\angle ABC = z$. What is $m\angle AOC$?



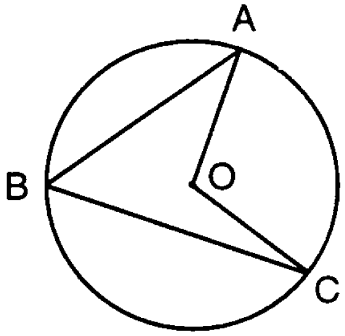
1) z
2) $2z$
3) $\frac{1}{2}z$
4) z^2

12 In the accompanying diagram of circle O, $\overline{AB}$ and $\overline{BC}$ are chords and m$\angle AOC = 96$. What is m$\angle ABC$?



1) 32
2) 48
3) 96
4) 192

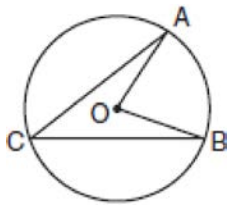
13 In the accompanying diagram of circle O, m$\angle AOC = 108$.



What is m$\angle ABC$?

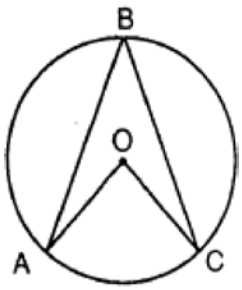
1) 27
2) 54
3) 108
4) 216

14 In the accompanying diagram of circle O, $m\angle ACB = 38$.

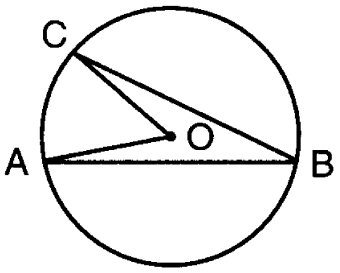


What is $m\angle AOB$?
1) 19
2) 38
3) 52
4) 76

15 In the accompanying diagram of circle O, the measure of $\angle ABC$ is 42º. What is the total number of degrees in the measure of $\angle AOC$?



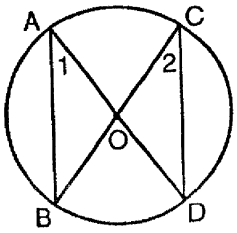
16 In the accompanying figure of circle O, $m\angle AOC = 52$. Find $m\angle ABC$.



17 An angle inscribed in a circle measures 80 degrees. What is the number of degrees in the intercepted arc?

18 In a circle, an inscribed angle intercepts an arc whose measure is $(14x - 2)°$. Express, in terms of x, the number of degrees in the measure of the inscribed angle.

19 In the accompanying diagram of circle O, $\overline{AD}$ and $\overline{BC}$ are diameters. Which statement is *not* true?



1) $\overline{AB} \cong \overline{CD}$
2) $\angle 1 \cong \angle 2$
3) $\overline{OA} \cong \overline{OD}$
4) $m\angle 1 = m\overset{\frown}{BD}$

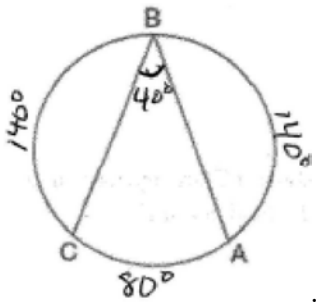
G.C.A.2: Chords, Secants and Tangents 12
Answer Section

1 ANS: 1 REF: 019717siii
2 ANS: 2 REF: 080127siii
3 ANS:
76

REF: 019401siii
4 ANS:
65

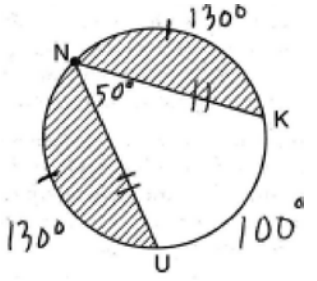
REF: 010202siii
5 ANS:
50

REF: 080203siii
6 ANS: 1



. Equal chords intercept equal arcs. If $m\overset{\frown}{BC} = 140$, then $m\overset{\frown}{AB} = 140$. $m\overset{\frown}{AC} = 80$ $(360 - (140 + 140))$. The measure of an inscribed angle is half that of its intercepted arc. So $m\angle B = 40$.

REF: 080107b
7 ANS: 1



REF: 080803b
8 ANS:
20

REF: 010406siii
9 ANS: 4 REF: 010115siii

10 ANS:
45

REF: 010009siii
11 ANS: 2 REF: fall9914b
12 ANS: 2 REF: 060802b
13 ANS: 2 REF: 089818siii
14 ANS: 4 REF: 010318siii
15 ANS:
84

REF: 089302siii
16 ANS:
26

REF: 069902siii
17 ANS:
160

REF: 060003siii
18 ANS:
$(7x - 1)°$

REF: 069507siii
19 ANS: 4 REF: 089414siii