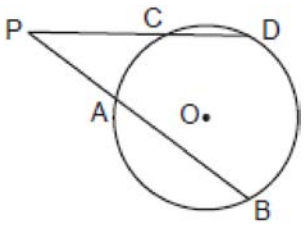
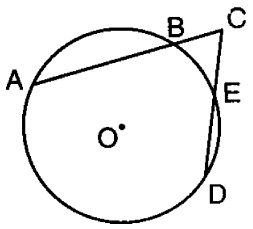
G.G.53: Segments Intercepted by Circle 2: Investigate, justify, and apply theorems regarding segments intersected by a circle: along two secants from the same external point

1 In the accompanying diagram, $\overline{PAB}$ and $\overline{PCD}$ are secants drawn to circle O, $PA = 8$, $PB = 20$, and $PD = 16$.

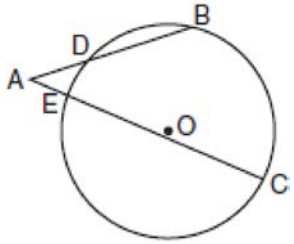


What is PC?
1) 6.4
2) 10
3) 12
4) 40

2 In the accompanying diagram of circle O, secant $\overline{CBA}$ and $\overline{CED}$ intersect at C. If $AC = 12$, $BC = 3$, and $DC = 9$, find EC.

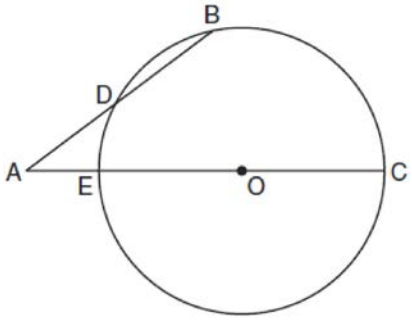


3 In the accompanying diagram, secant $\overline{AB}$ intersects circle O at D, secant $\overline{AC}$ intersects circle O at E, $AE = 4$, $AC = 24$, and $AB = 16$. Find AD.



4 Secants $\overline{JKL}$ and $\overline{JMN}$ are drawn to circle O from an external point, J. If $JK = 8$, $LK = 4$, and $JM = 6$, what is the length of $\overline{JN}$?
1) 16
2) 12
3) 10
4) 8

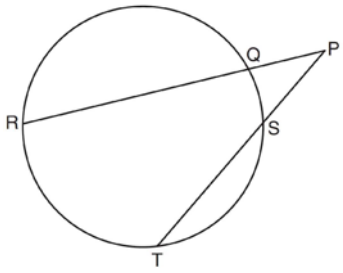
5 In the diagram below of circle O, secant $\overline{AB}$ intersects circle O at D, secant $\overline{AOC}$ intersects circle O at E, $AE = 4$, $AB = 12$, and $DB = 6$.



(Not drawn to scale)

What is the length of $\overline{OC}$?
1) 4.5
2) 7
3) 9
4) 14

6 In the diagram below, secants $\overline{PQR}$ and $\overline{PST}$ are drawn to a circle from point P.



If $PR = 24$, $PQ = 6$, and $PS = 8$, determine and state the length of $\overline{PT}$.

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Answer Section

1 ANS: 2 REF: 080026siii

2 ANS:
4

REF: 069810siii

3 ANS:
6

REF: 080310siii

4 ANS: 1
$12(8) = x(6)$
$96 = 6x$
$16 = x$

REF: 061328ge

5 ANS: 2
$(d + 4)4 = 12(6)$
$4d + 16 = 72$
$d = 14$
$r = 7$

REF: 061023ge

6 ANS:
$24 \cdot 6 = w \cdot 8$
$144 = 8w$
$18 = w$

REF: 011533ge