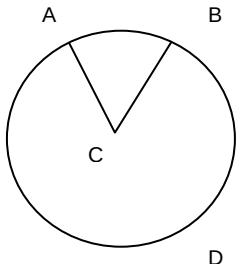
Algebra 2
Unit: Geometry
Section: Geometry of Circles

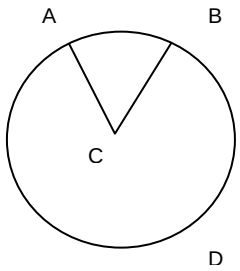
Review Worksheet Key

1) In circle C, arc AB measures 34 degrees. Angle ACB measures (3x + 7) degrees. Find the value of x.



$3x + 7 = 34$
$3x = 27$
$x = 9$

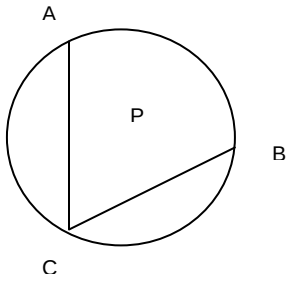
2) In circle C, arc ADB measures 133 degrees. Angle ACB measures 5x – 7 degrees. Find the value of x.



$m\overset{\frown}{AB} = 360^\circ - m\overset{\frown}{ADB}$
$m\overset{\frown}{AB} = 360^\circ - 133^\circ$
$m\overset{\frown}{AB} = 227^\circ$

$m\angle ACB = m\overset{\frown}{AB}$
$5x - 7 = 227$
$5x = 234$
$x = 46.8$

3) Angle ACB measures 3x + 1 degrees and arc AB measures 7x – 5 degrees. Find the value of x.



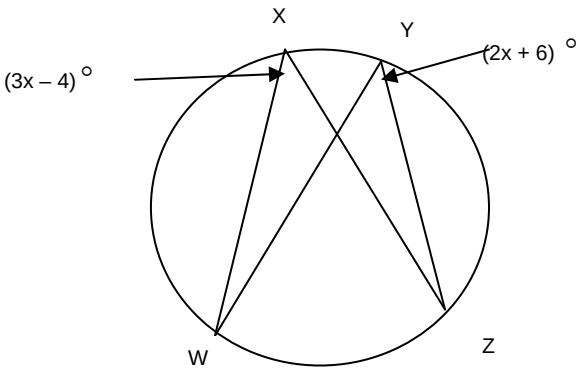
$m\angle ACB = \frac{1}{2}\left(m\overset{\frown}{AB}\right)$

$3x+1=\frac{1}{2}(7x-5)$

$6x+2=7x-5$

$x=7$

4) Find the measure of angle Y.

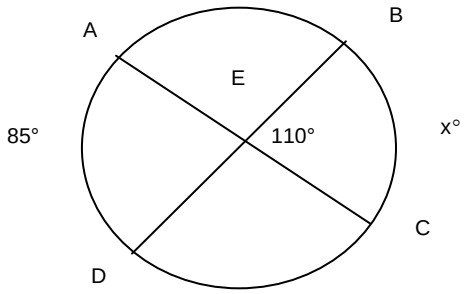


3x – 4 = 2x + 6

x = 10

$m\angle Y = (2(10)+6)^{\circ}$

5) Find the value of x.



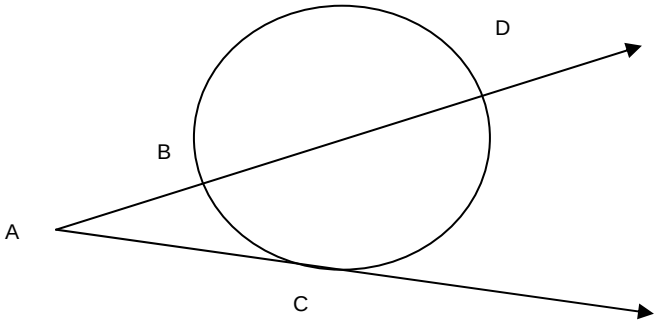
$m\angle BEC = \frac{1}{2}\left(m\overset{\frown}{AD} + m\overset{\frown}{BC}\right)$

$110 = \frac{1}{2}(85 + x)$

$220 = 85 + x$

$x = 135$

6) Find the $m\overset{\frown}{DC}$ if $m\overset{\frown}{BC}$ is equal to $27°$ and angle A measures $12°$.



$m\angle A = \frac{1}{2}\left(m\overset{\frown}{DC} - m\overset{\frown}{BC}\right)$

$12^\circ = \frac{1}{2}\left(m\overset{\frown}{DC} - 27^\circ\right)$

$24^\circ = m\overset{\frown}{DC} - 27^\circ$

$m\overset{\frown}{DC} = 51^\circ$