Circles Quiz Review

Math 3

Name: **Key!**

Date: _____

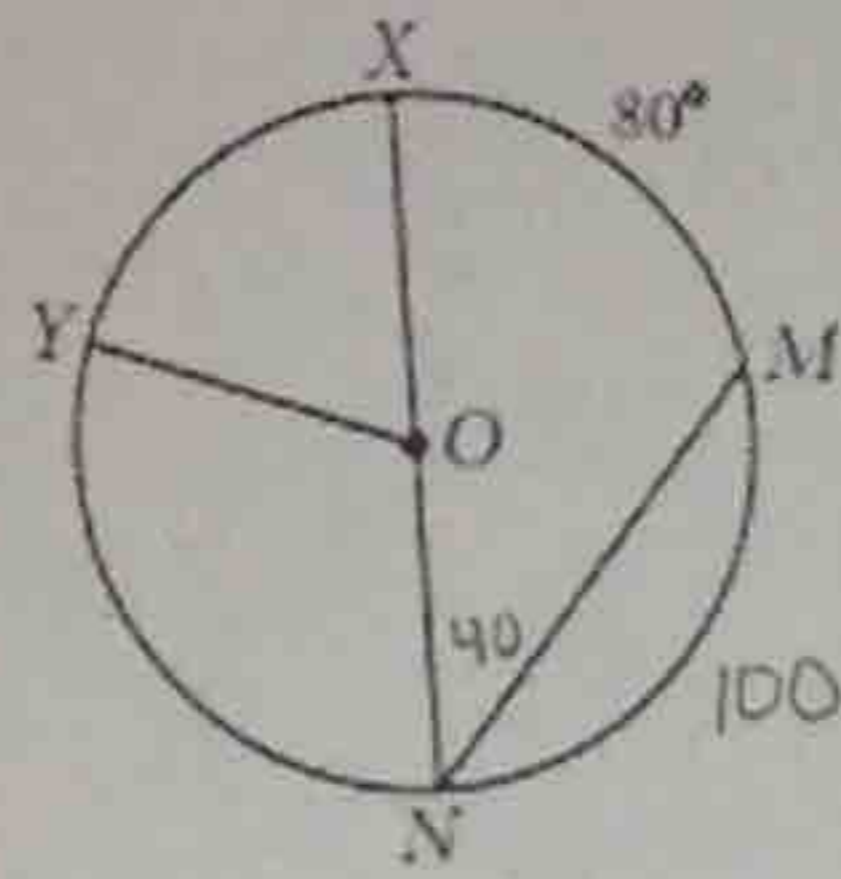**Directions:** Answer each of the following.

1. $m\widehat{XM} = 80°$

$m\angle XNM = \underline{40}$

$m\widehat{XN} = \underline{180°}$

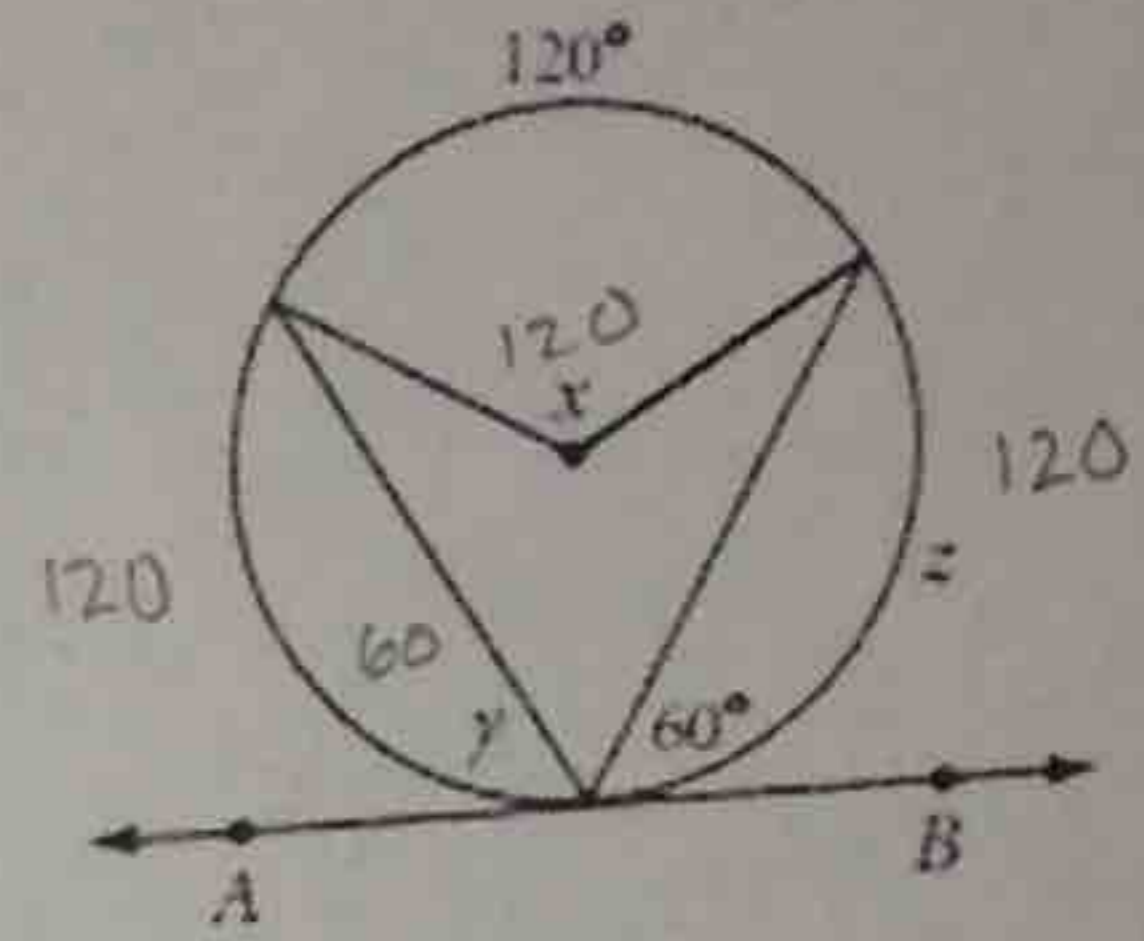$m\widehat{MN} = \underline{100°}$

2. $\overline{AB}$ is a tangent.
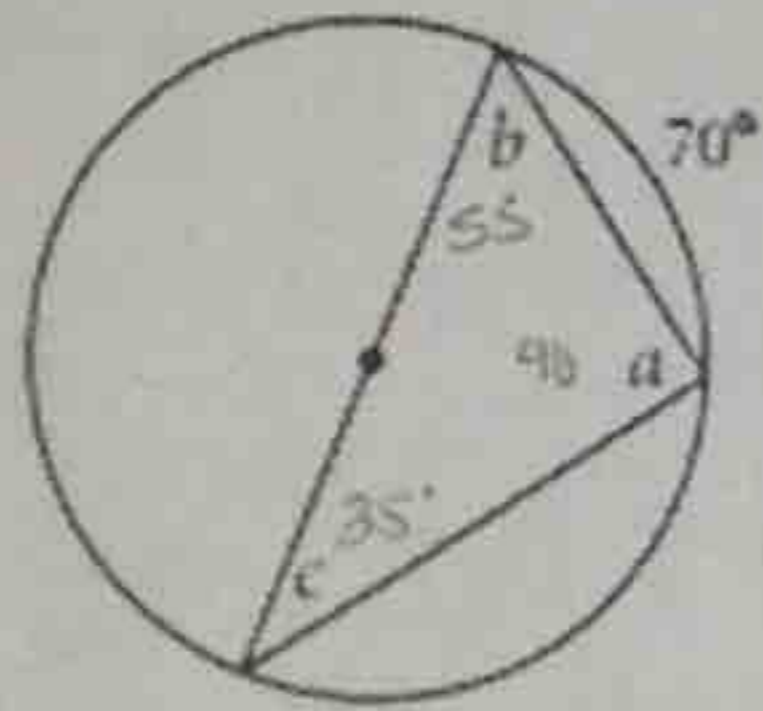
$x = \underline{120}$

$y = \underline{60}$

$z = \underline{120}$
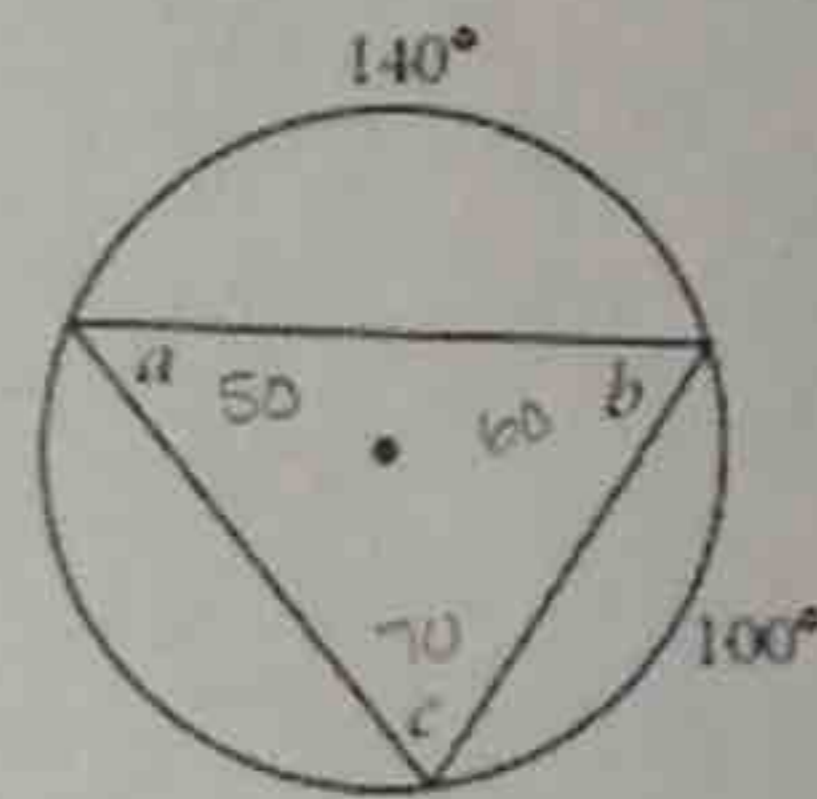
3. $a = \underline{90}$

$b = \underline{55}$

$c = \underline{35}$

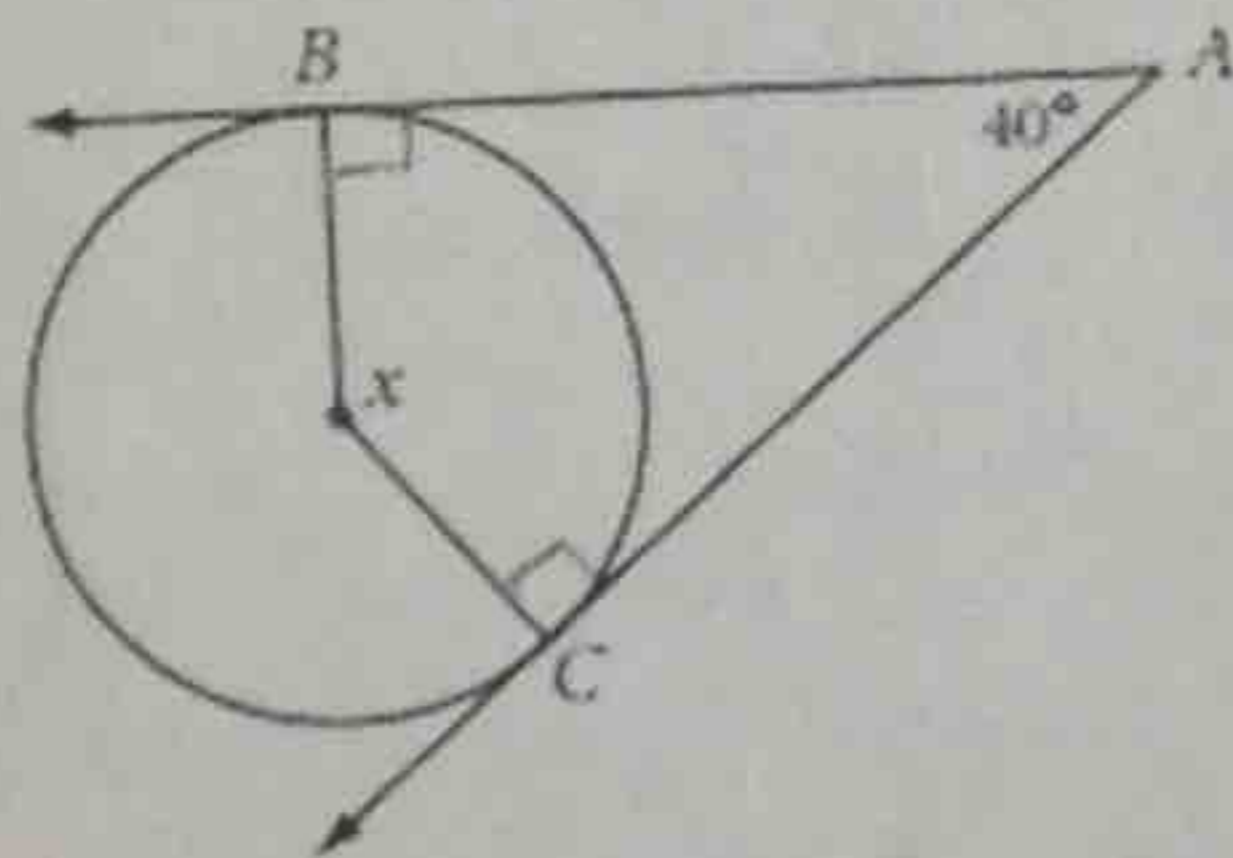**4.** $a = \underline{50}$

$b = \underline{60}$

$c = \underline{70}$

5. $\overline{AB}$ and $\overline{AC}$ are tangents.

$x = \underline{140}$

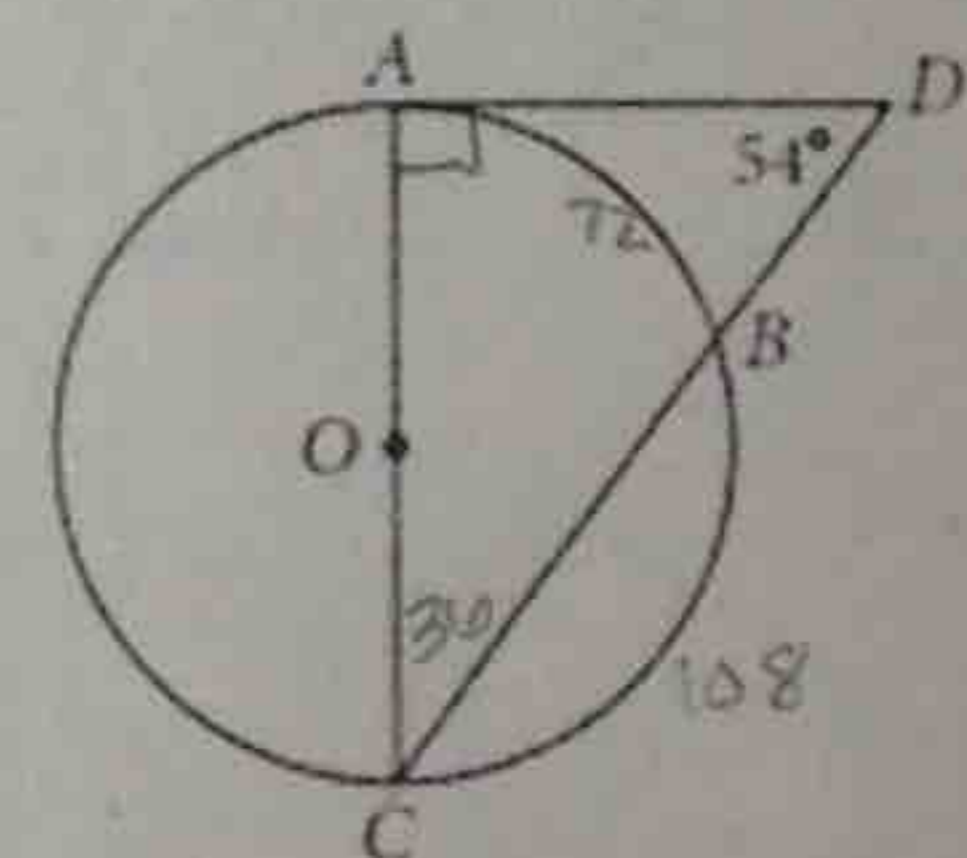$$\begin{array}{r} 360 \\ -\ 90 \\ -\ 90 \\ -\ 40 \\ \hline 140 \end{array}$$

6. $\overline{AD}$ is a tangent. $\overline{AC}$ is a diameter.

$m\angle A = \underline{90}$

$m\widehat{AB} = \underline{72}$

$m\angle C = \underline{36}$
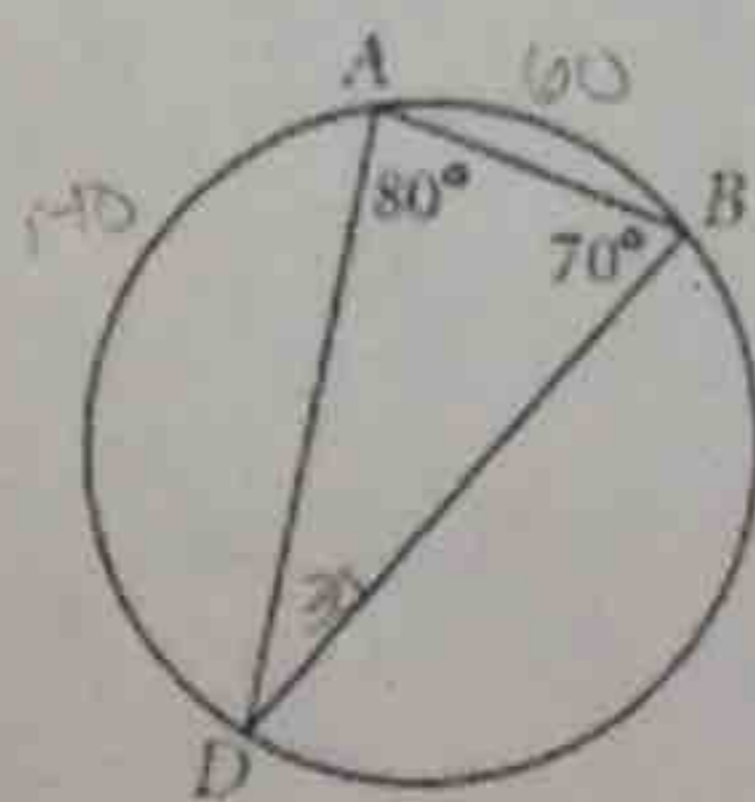
$m\widehat{CB} = \underline{108}$

7. $m\widehat{AD} = \underline{140°}$

$m\angle D = \underline{30°}$

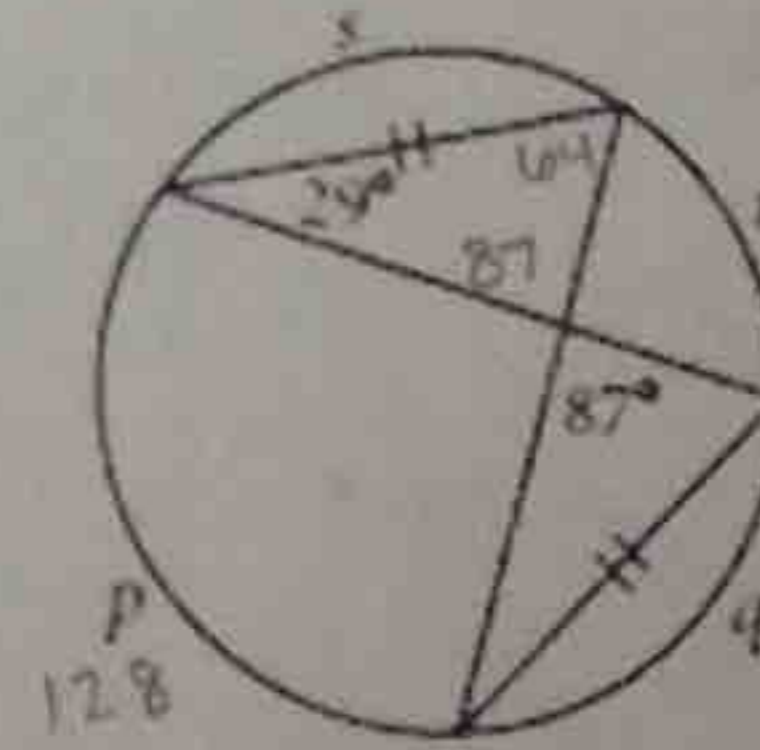$m\widehat{AB} = \underline{60°}$

$m\widehat{DAB} = \underline{200°}$

8. $p = \underline{128}$

$q = \underline{87°}$

$r = \underline{58°}$

$s = \underline{87°}$

≅ chords have
≅ arcs, so
$s = q$

$360 - 128 - 58 = 174$

$s = \dfrac{174}{2} = 87$

9. Find the lettered angle and arc measures. $\overline{AT}$ and $\overline{AZ}$ are tangents.

$a = \underline{50}$ $b = \underline{50}$ $c = \underline{80}$

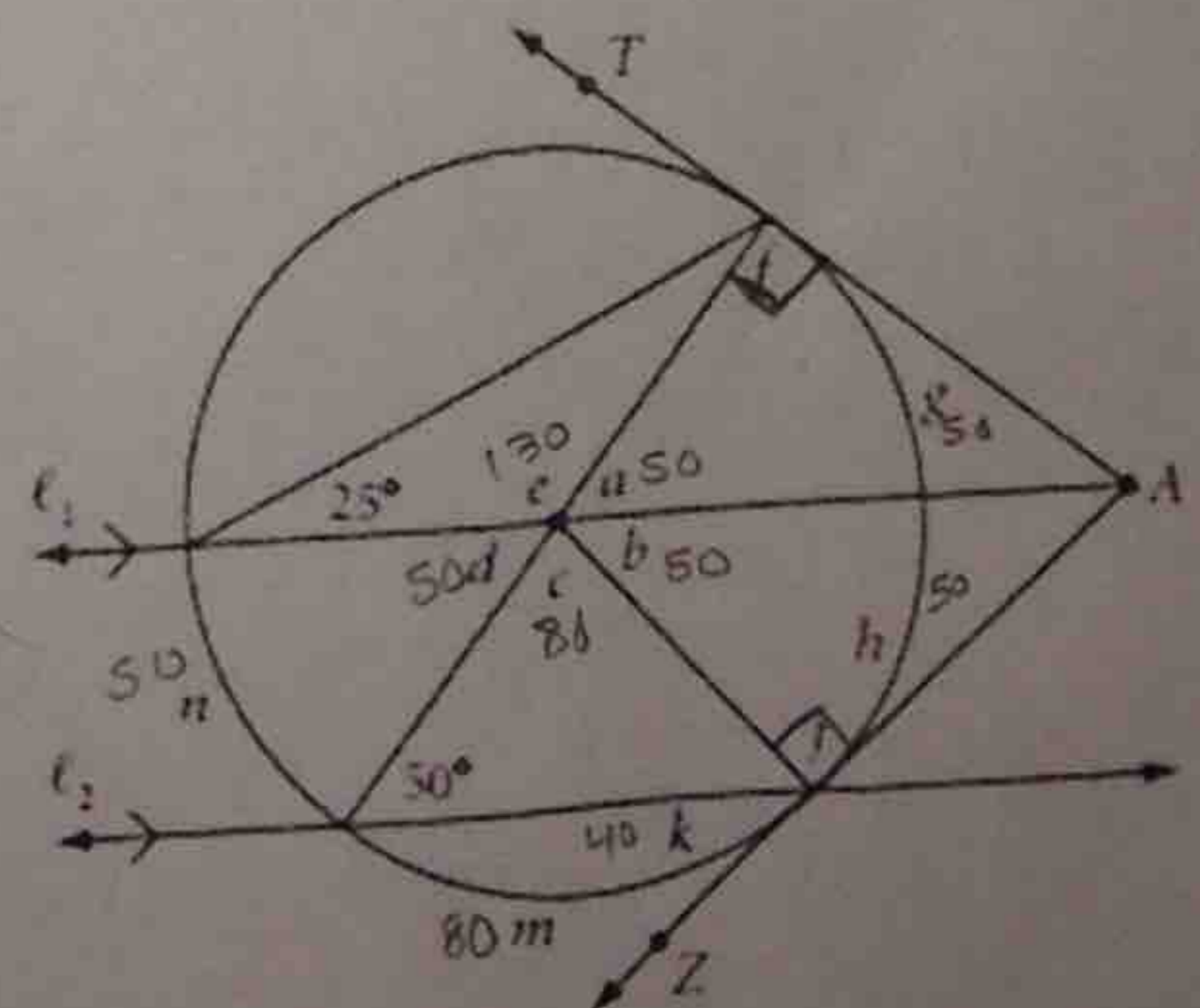$d = \underline{50}$ $e = \underline{130°}$ $f = \underline{90}$

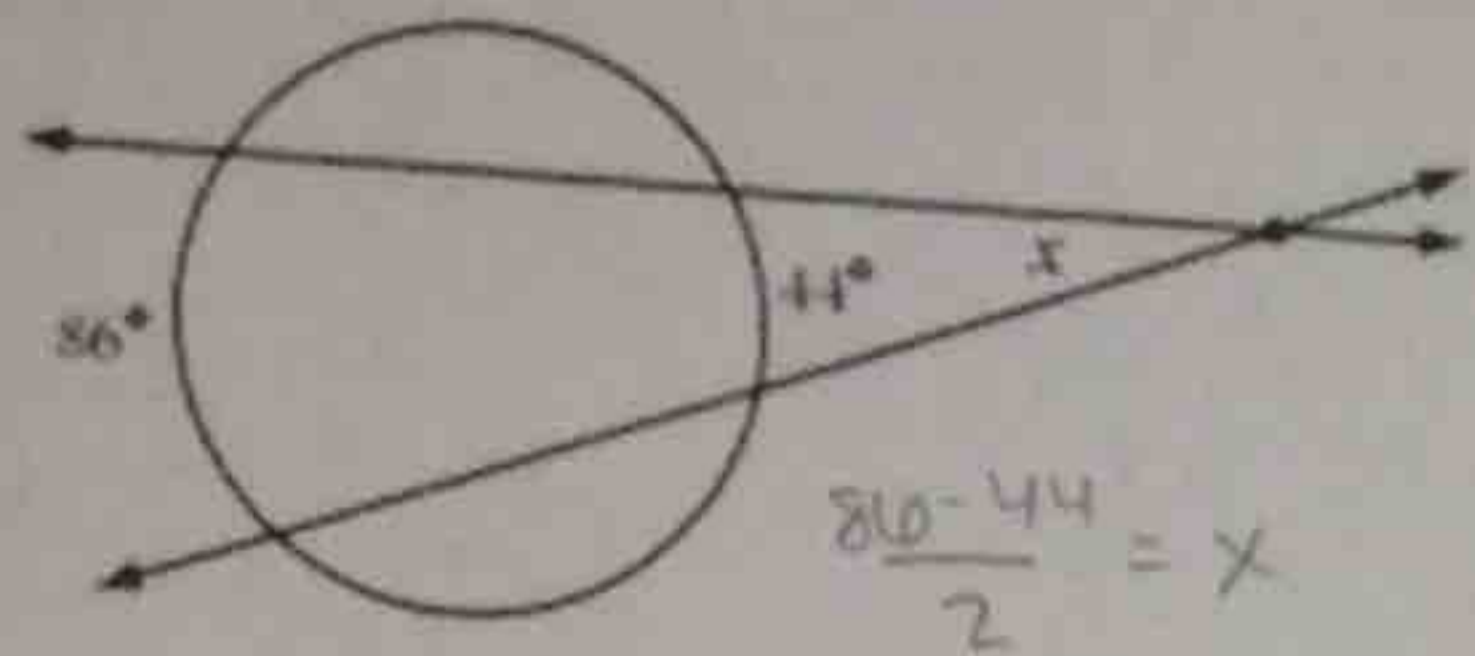$g = \underline{50}$ $h = \underline{50}$ $j = \underline{90}$

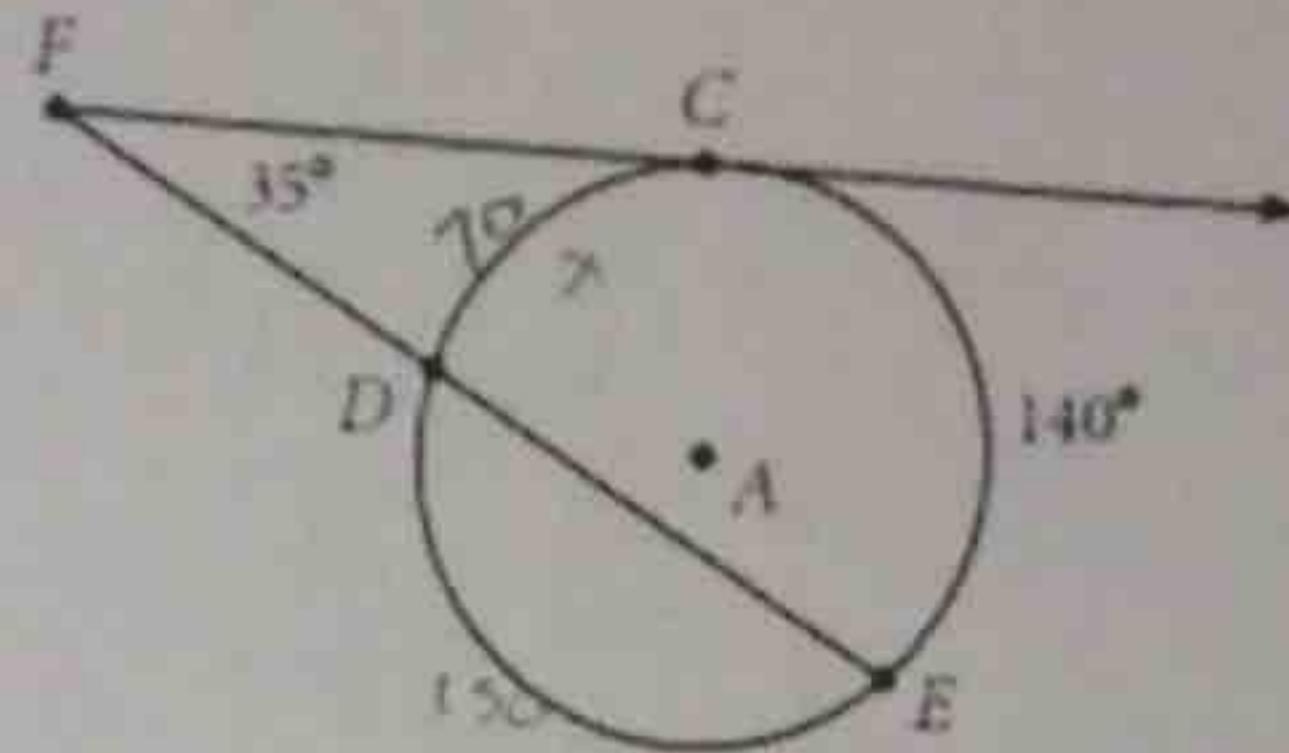$k = \underline{40}$ $m = \underline{80}$ $n = \underline{50}$

1. $x =$ __21__

86° 44° x

$$\frac{86-44}{2} = x$$

2. $\overrightarrow{FC}$ is tangent to circle A at point C.
$m\widehat{DC} =$ __70__, $m\widehat{ED} =$ __150__

$$\frac{140-x}{2} = 35$$
$$140-x = 70$$
$$x = 70$$

3. $\overrightarrow{ED}$ and $\overrightarrow{EC}$ are tangents.
$m\widehat{DC} =$ __114°__, $m\angle DEC =$ __66°__
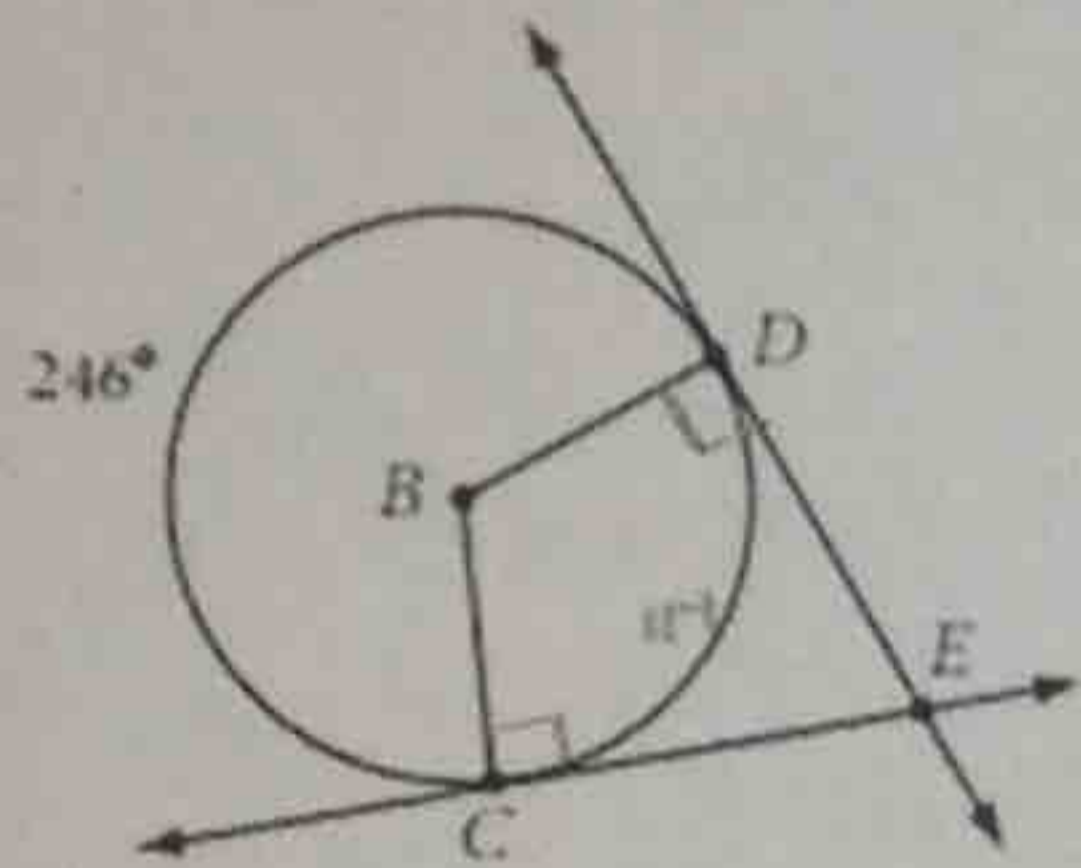
$$\frac{246-114}{2} = 66$$

4. $\overrightarrow{CE}$ is a tangent, $m\widehat{BC} = 150°$
$m\angle BCE =$ __75°__, $m\widehat{BAC} =$ __210°__
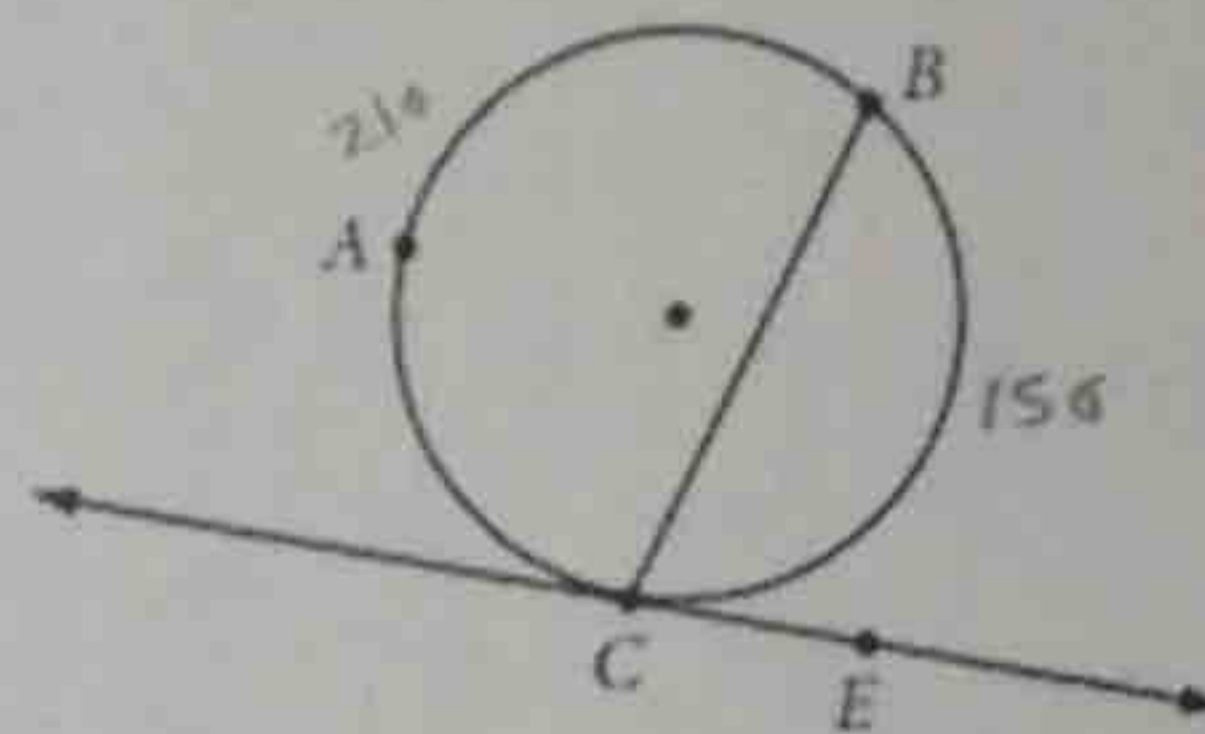
5. $x =$ __80°__, $y =$ __110°__, $z =$ __141°__
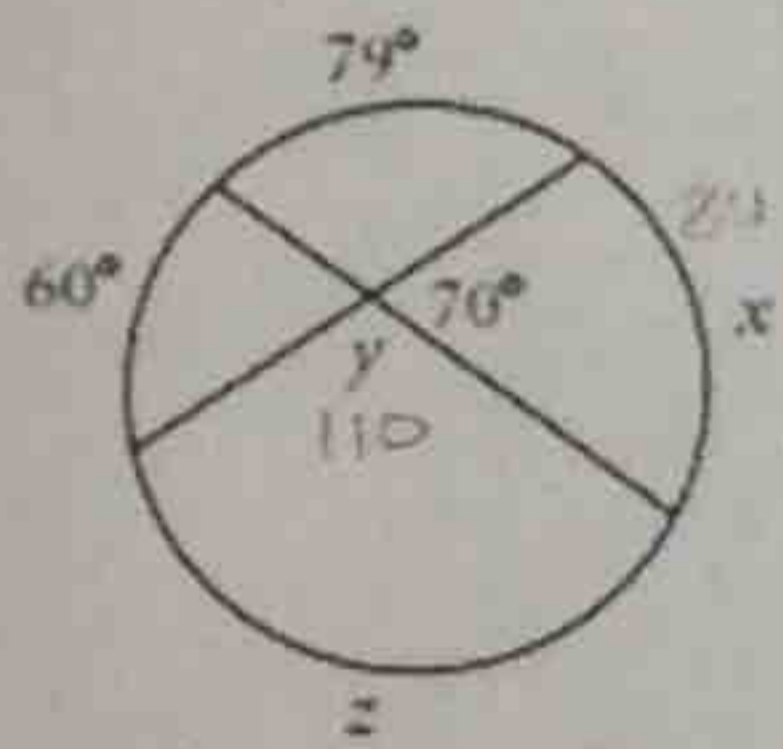
$$70 = \frac{60+x}{2}$$
$$140 = 60+x$$
$$x = 80$$

6. $x =$ __34__, $y =$ __150__, $z =$ __122__
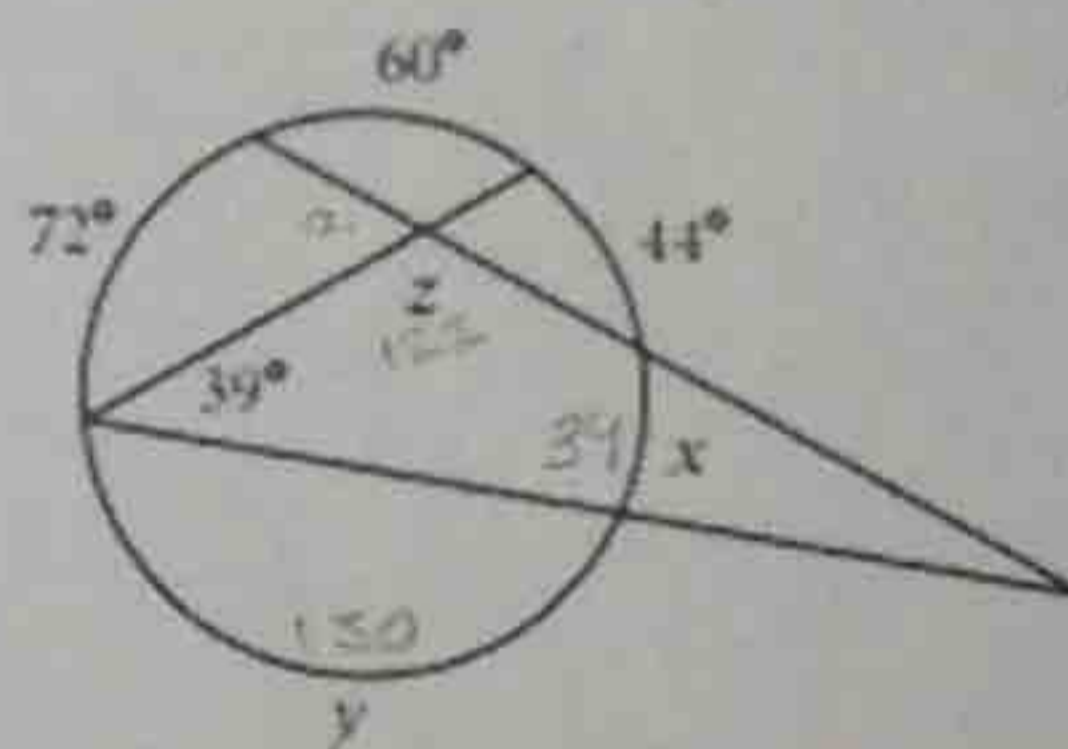
$$2(39) = x+44$$
$$78 = x+44$$
$$x = 34$$
$$z = 60 + \frac{(150+34)}{2} = 122$$

7. $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are tangents.
$x =$ __112__, $y =$ __68°__, $z =$ __53°__
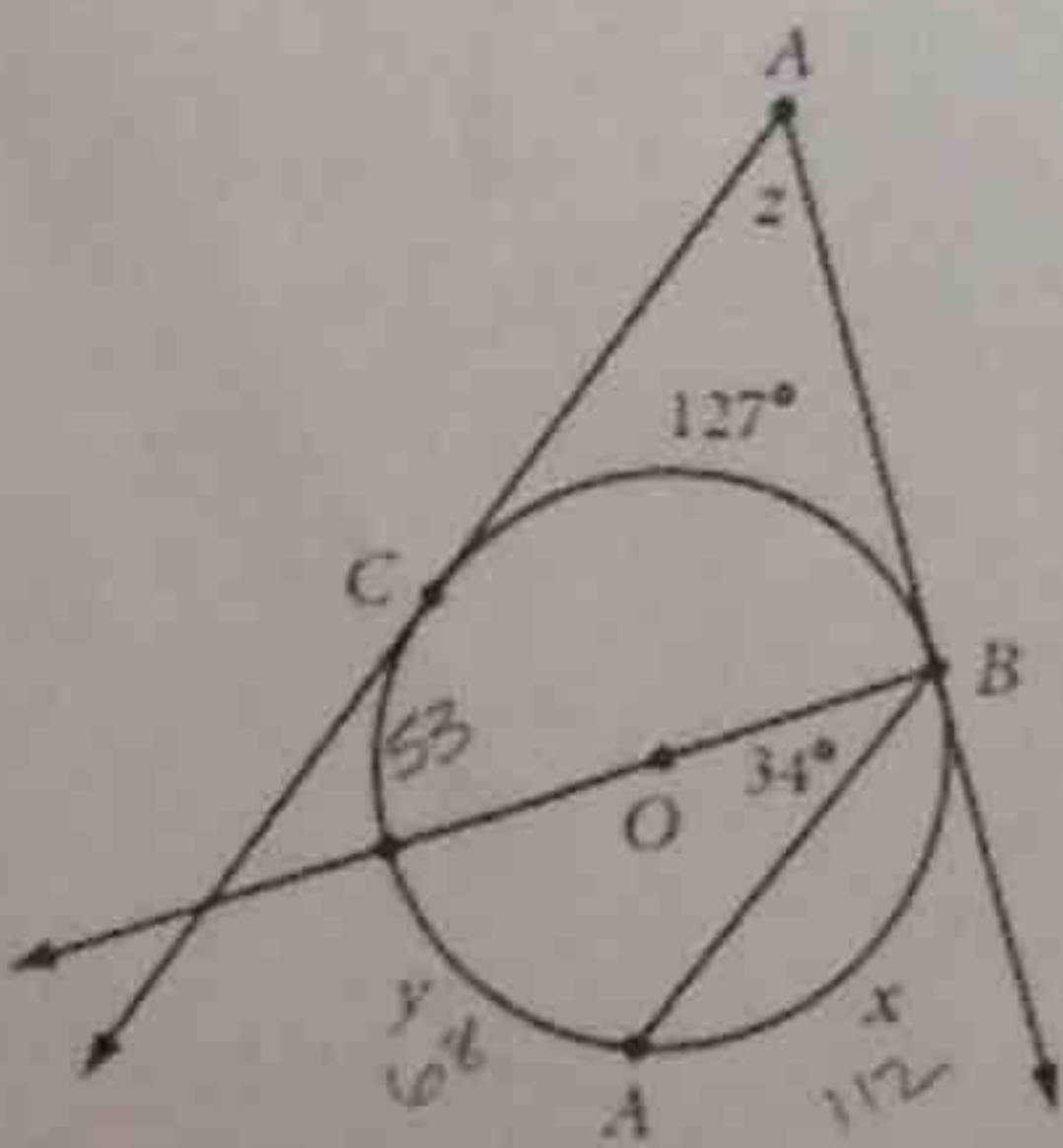
8. $\overrightarrow{AB}$ is a tangent, $m\angle ABC = 75°$
$x =$ __28__, $y =$ __34.5__

$$y = \frac{97-28}{2}$$
$$y = 34.5$$

$$\begin{array}{r} 180 \\ -68 \\ \hline x = 112 \end{array}$$

$$z = \frac{233-127}{2}$$
$$z = 53°$$