WS 3

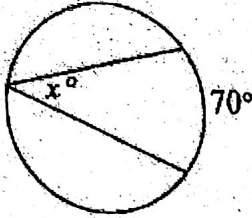# Homework

For each question, write out the appropriate formula, plug in the known values, then solve.
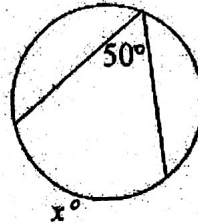
1.

Vertex on Circle

$x° = \frac{1}{2}(70°)$

$x° = 35°$

2.

Vertex on Circle

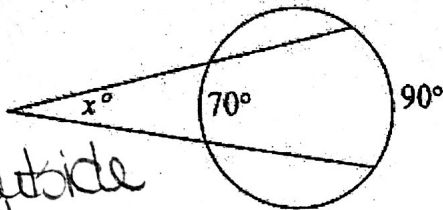$50° = \frac{1}{2}(x°)$

$100° = x°$

3.

Vertex outside Circle

$x° = \frac{1}{2}(90° - 70°)$

$x° = 10°$

4.
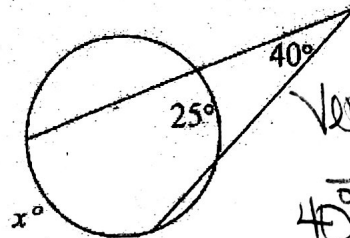
Vertex outside Circle

$40° = \frac{1}{2}(x° - 25°)$

$80° = x° - 25°$

$105° = x°$

5.

$(360-x)$
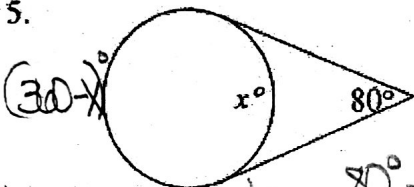
Vertex outside Circle

$80° = \frac{1}{2}[360 - x - x°]$

$160° = 360 - 2x$

$-200° = -2x$

$100 = x$

6.
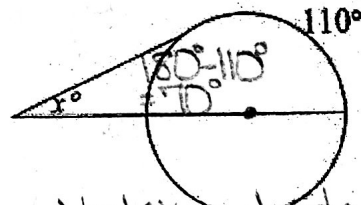
Vertex outside Circle

$x° = \frac{1}{2}(110° - 70°)$

$x° = 20°$

7.
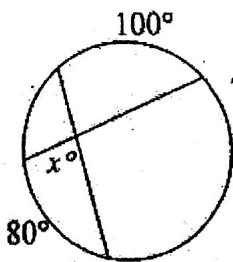
Vertex inside Circle

$x° = \frac{1}{2}(100° + 80°)$

$x° = 90°$

8.
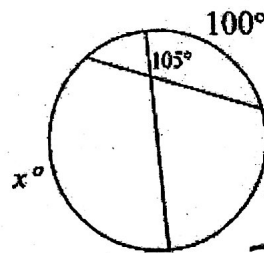
Vertex inside Circle

$105° = \frac{1}{2}(x° + 100°)$

$210° = x° + 100°$

$110° = x°$

HNCM3
Unit 6: Reasoning w/ Geometry Part 2
WS 2: Interior & Exterior Angles

Directions: Solve for x.

1.

88°
86°
x°

Vertex Inside

$x° = \frac{1}{2}(86° + 88°) = 87°$

2.

x°
20°
90°

Vertex outside

$x° = \frac{1}{2}(90° - 20°)$
$= 35°$

3.

x° 60°
150°

Vertex outside

$x° = \frac{1}{2}(150° - 60°)$
$= 45°$

Directions: Solve for each variable listed.

4.

y°   z°
Diameter
120°

Vertex outside

$x° = \frac{1}{2}(120° - 60°) = 30°$

Vertex Inside $90° = \frac{1}{2}(120° + w°)$ $w° = 60°$

$z° = 180° - 60° = 120°$

$y° = \frac{1}{2}(120° - 60°) = 30°$

5.

42°
x°
z°
y°
69°

See below

6.

x°
6°

Vertex outside

$90° = \frac{1}{2}(x° - 6°)$
$90° = \frac{1}{2}x° - 3°$
$93° = \frac{1}{2}x°$
$186° = x$
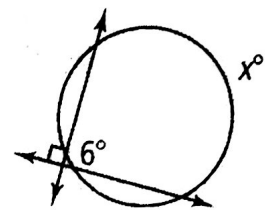
7. There is a circular cabinet in the dining room. Looking in from another room at point A, you estimate that you can see an arc of the cabinet of about 100°. What is the measure of ∠A formed by the tangents to the cabinet?

Cabinet
B
100°
A
C
Kitchen doorway
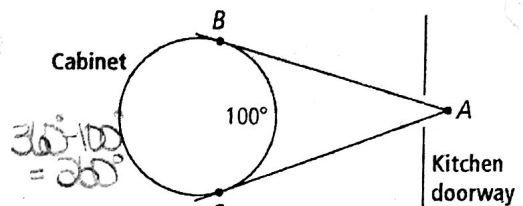
$360° - 100°$
$= 260°$

Vertex Outside
$m\angle A = \frac{1}{2}(260° - 100°)$
$= 80°$

5. Vertex outside

$\begin{cases} 42° = \frac{1}{2}(y° + z° - x°) \\ 69° = \frac{1}{2}(x° + y° - z°) \\ 69° = \frac{1}{2}(x° + z° - y°) \end{cases}$

$138° = x° + y° - z°$
$138° = x° - y° + z°$
_____
$276° = 2x°$
$138° = x°$

$84° = -x° + y° + z°$
$138° = x° + y° + z°$
_____
$222° = 2y°$
$111° = y$

sub into any of the 3 equations

$z° = 111°$