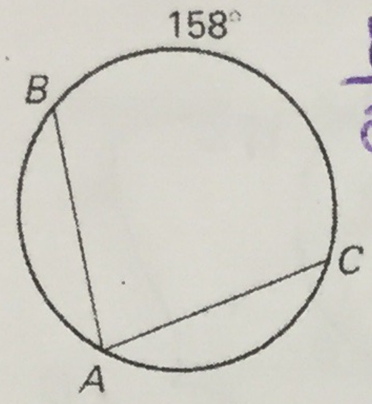
Name _____ Date _____

30.4 **Practice** - Inscribed Angles

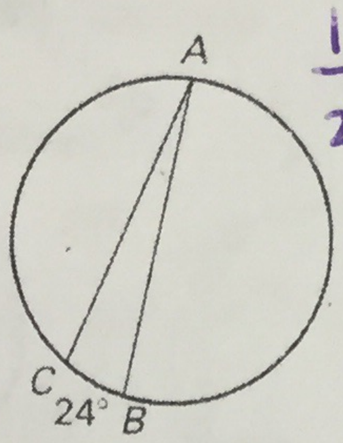
Find the indicated measure.

1. $m\angle A$



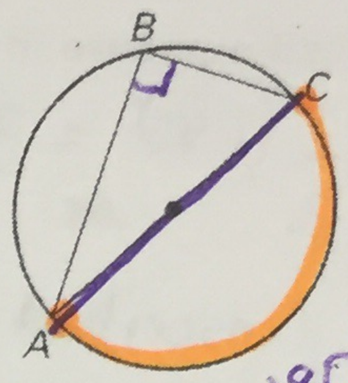
$\frac{1}{2}(158) = 79°$

2. $m\angle A$



$\frac{1}{2}(24) = 12°$

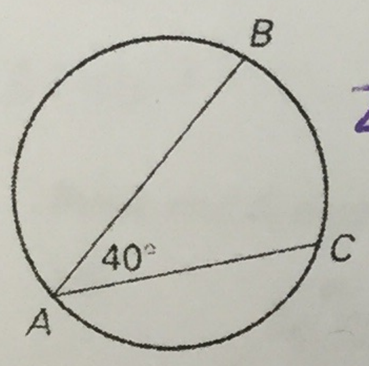
3. $m\angle B$



$\frac{1}{2}(180) = 90°$

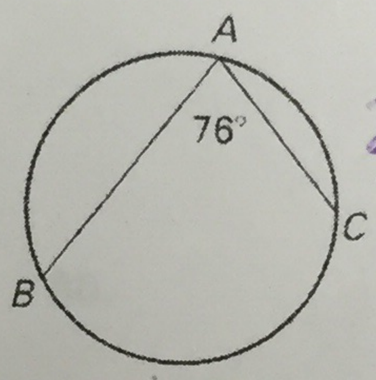
180°

4. $m\overset{\frown}{BC}$



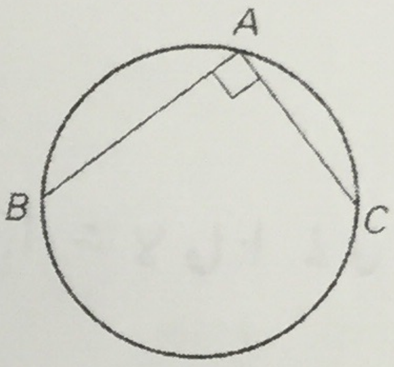
$2(40) = 80°$

5. $m\overset{\frown}{BC}$



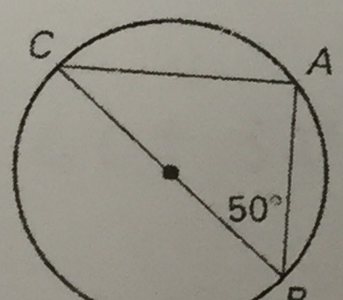
$2(76) = 152°$

6. $m\overset{\frown}{BC}$



$2(90) = 180°$

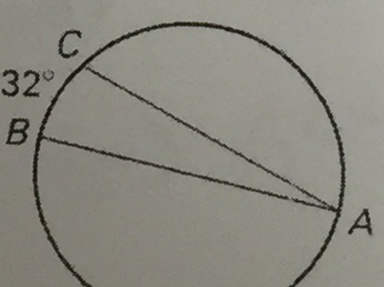
7. $m\angle C$ 40°



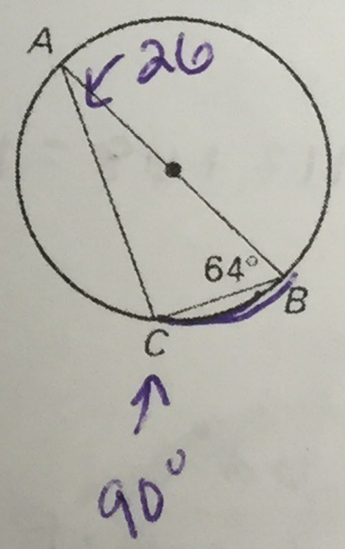
< 90°

180-90-50

8. $m\angle A$ $\frac{1}{2}(32) = 16°$



9. $m\overset{\frown}{BC}$ $2(26) = 52°$



< 26

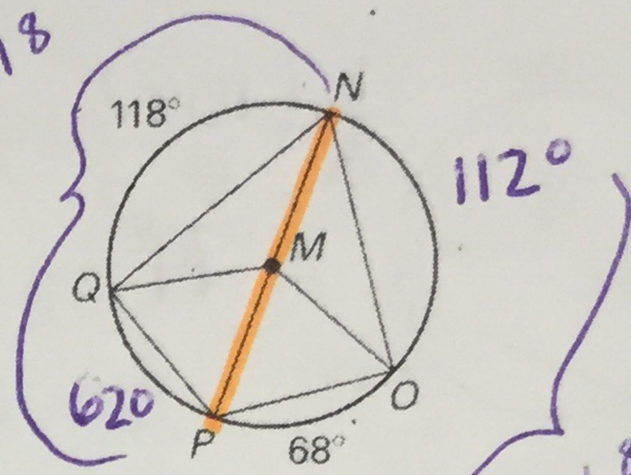
180-90-64 = 2

90°

Name _____ Date _____

30.4 **Practice** *continued*

Find the indicated measure in ⊙M.



180-118

112°

180-68

10. $m\angle PNO$ $\frac{1}{2}(68) = 34^\circ$

(inscribed angle)

11. $m\angle QNP$ $\frac{1}{2}(62) = 31^\circ$

(inscribed angle)

12. $m\overset{\frown}{PQ}$ $180 - 118 = 62^\circ$

13. $m\overset{\frown}{QO}$ $62 + 68 = 130^\circ$

14. $m\angle NMO$ 112°

(it's a central angle!)

15. $m\overset{\frown}{NOP}$ $112 + 68 = 180^\circ$

16. $m\angle QMP$ 62°

(central angle)

17. $m\overset{\frown}{OQN}$ $360 - 112 = 248^\circ$

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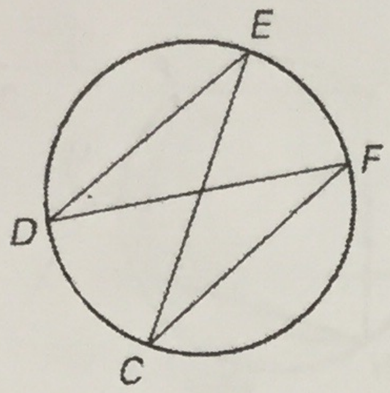
30.4 **Practice** *continued*

Name two pairs of congruent angles.

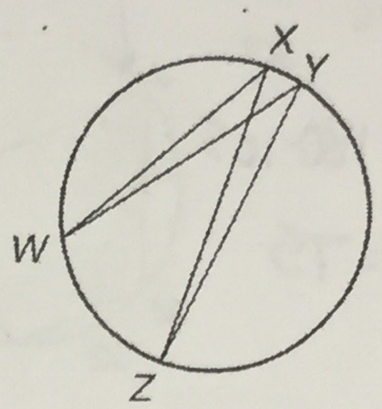
18.



∠EDF ≅ ∠ECF

∠DEC ≅ ∠DFC

19.

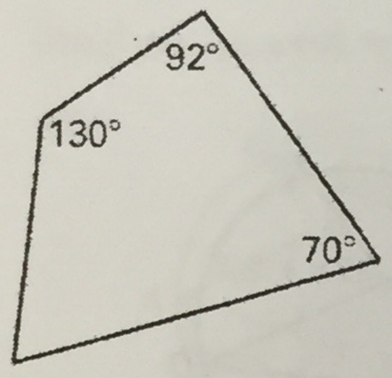


∠XWY ≅ ∠XZY

∠WXZ ≅ ∠WYZ

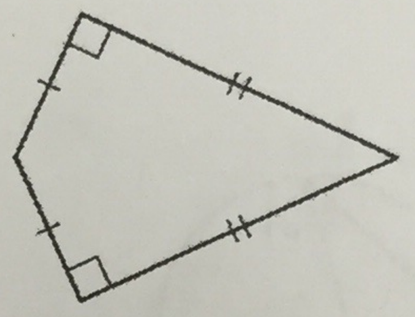
Decide whether a circle can be circumscribed about the quadrilateral.

20.



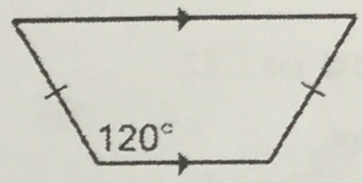
No

21.



Yes

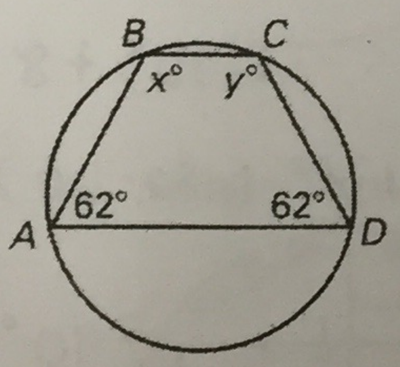
22.



Yes

Find the values of the variables.

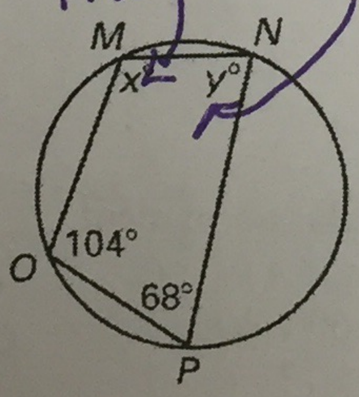
23.



180-62

x & y = 118°

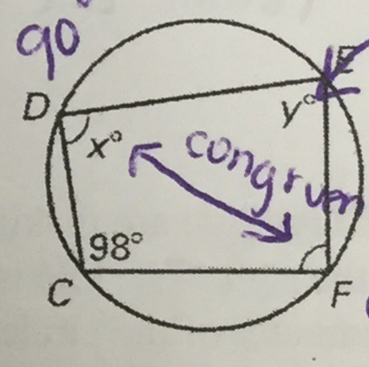
24.



112°

76°

25.



90°

82°

congruent

90°

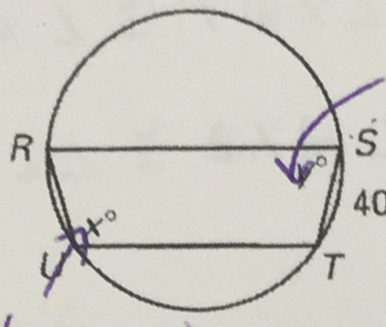
★ remember - quadrilaterals inscribed in circles have opposite ∠s that are supplementary

Name _____ Date _____

30.4 Practice continued

Find the values of the variables.

26.



$x = \frac{1}{2}(170+40)$

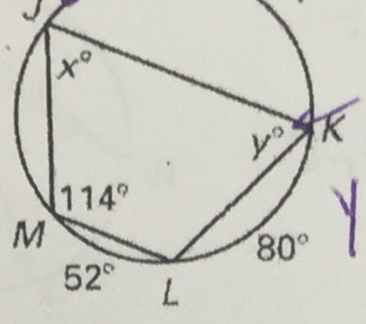
$x = \frac{1}{2}(210)$

$x = 105$

$y = 180 - 105$

$y = 75$

27.



$\frac{1}{2}(52+80)$

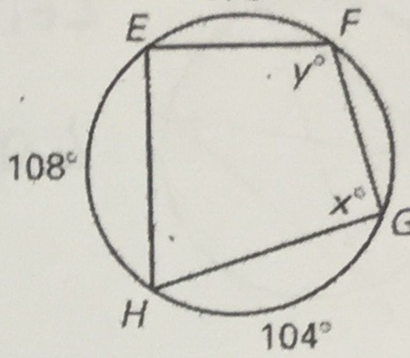
$\frac{1}{2}(132)$

$x = 66°$

$180 - 114$

$y = 66°$

28.



$y = \frac{1}{2}(108+104)$

$y = \frac{1}{2}(212) = 106°$

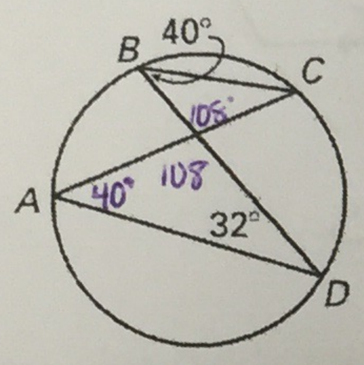
$x = \frac{1}{2}(75+108)$

$x = \frac{1}{2}(183)$

$x = 91.5$

Find $m\angle A$ and $m\angle C$.

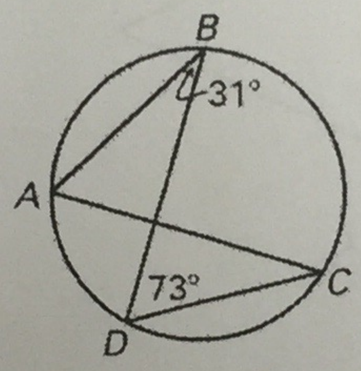
29.



$\angle A = 40°$ (has the same Arc $\overset{\frown}{CD}$ as $\angle B$)

$\angle C = 32°$ (same arc as $\angle D$)

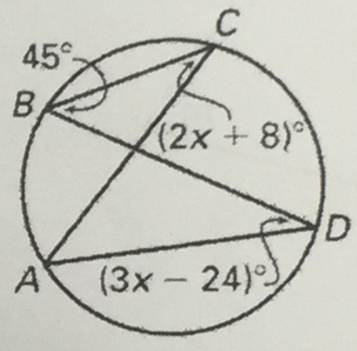
30.



$\angle A = 73°$

$\angle C = 31°$

31.



$\angle A = 45°$

$\angle C \Rightarrow 2x + 8 = 3x - 24$

$32 = x$

$2(32) + 8 = 72°$

32. Stained Glass You are making the stained glass ornament shown at the right. The kite is symmetric, so $\angle A \cong \angle C$, $\overline{BD}$ is a diameter of the circle, and $m\angle D = 60°$. What are the measures of $\angle A$, $\angle B$, and $\angle C$?