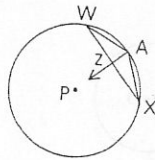


18 Given: $\odot P$

Z is mdpt of $\overline{WX}$.

$\triangle WAX$ is isos, base $\overline{WX}$.

Prove: $\overline{AZ}$ passes through P .



1 $\odot P$

2 Z is mdpt of $\overline{WX}$.

3 $\overline{WZ} \cong \overline{ZX}$

4 $\triangle WAX$ is isos.

5 $\overline{WA} \cong \overline{AX}$

6 $\angle W \cong \angle X$

7 $\triangle WAZ \cong \triangle XAZ$

8 $\angle WZA \cong \angle XZA$

9 $\overline{ZA} \perp \overline{WX}$

10 $\overline{ZA}$ bisects $\overline{WX}$.

11 $\overline{ZA} \perp$ bis of $\overline{WX}$.

12 $\overline{AZ}$ passes through P .

1 Given

2 Given

3 A mdpt divides a seg into 2 $\cong$ segs.

4 Given

5 In an isos $\triangle$, 2 sides are $\cong$.

6 If $\triangle$ then $\triangle$

7 SAS

8 CPCTC

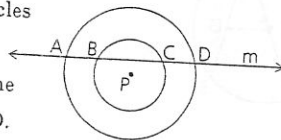
9 $\cong$ adj $\angle$ s form $\perp$ lines.

10 A line that divides a seg into 2 $\cong$ segs is a bis.

11 Steps 9 and 10

12 $\perp$ bis of a chord passes through center of $\odot$.

19 Given: Two concentric circles with center P ;
line m intersects the circles at A, B, C, D .



Prove: $\overline{AB} \cong \overline{CD}$

1 Two concentric circles with center P

2 Line m intersects the circles at A, B, C, D .

3 Draw $\overline{PM} \perp$ to m

4 $\overline{BM} \cong \overline{CM}$

5 $\overline{AM} \cong \overline{DM}$

6 $\overline{AB} \cong \overline{CD}$

1 Given

2 Given

3 Two points determine a line.

4 If radius is $\perp$ to chord, it bis it.

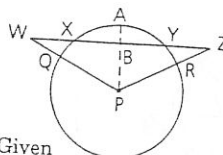
5 Same as 4

6 Subtraction prop

20 Given: $\odot P$

$\overline{WX} \cong \overline{YZ}$

Prove: $\overline{WQ} \cong \overline{ZR}$



1 $\odot P$

2 $\overline{WX} \cong \overline{YZ}$

3 Draw $\perp$ radius $\overline{AP}$

4 $\overline{XB} \cong \overline{BY}$

5 $\overline{WB} \cong \overline{BZ}$

6 $\angle ZBP$ rt $\angle$

7 $\angle WBP$ rt $\angle$

8 $\angle ZBP \cong \angle WBP$

1 Given

2 Given

3 From a pt not on a line to a line, there is only one $\perp$ seg.

4 $\perp$ radii bis chord.

5 Addition prop

6 $\perp$ lines form rt $\angle$ s.

7 Same as 6

8 Rt $\angle$ s are $\cong$.

9 $\overline{BP} \cong \overline{BP}$

10 $\triangle ZBP \cong \triangle WBP$

11 $\overline{PW} \cong \overline{PZ}$

12 $\overline{PQ} \cong \overline{PR}$

13 $\overline{WQ} \cong \overline{ZR}$

9 Reflexive prop

10 SAS

11 CPCTC

12 Radii of a $\odot$ are $\cong$.

13 Subtraction prop

21 Given: $\overline{AB}$ is diameter of $\odot O$.

$\overline{AC} \parallel \overline{BD}$

Concl: $\overline{AC} \cong \overline{BD}$

1 $\overline{AB}$ is diameter of $\odot O$.

2 $\overline{AC} \parallel \overline{BD}$

3 Draw $\overline{OC}$ and $\overline{OD}$

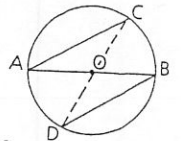
4 $\overline{OC} \cong \overline{OD}$

5 $\angle CAO \cong \angle DBO$

6 $\angle AOC \cong \angle BOD$

7 $\triangle AOC \cong \triangle BOD$

8 $\overline{AC} \cong \overline{BD}$



1 Given

2 Given

3 Two pts determine a line

4 Radii of a $\odot$ are $\cong$.

5 PAI

6 Vert $\angle$ s are $\cong$.

7 AAS

8 CPCTC

22

$$x^2 + 24^2 = r^2$$

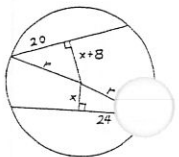
$$(x + 8)^2 + 20^2 = r^2$$

$$(x + 8)^2 + 20^2 = x^2 + 24^2$$

$$x^2 + 16x + 64 + 400 = x^2 + 576$$

$$16x = 112$$

$$x = 7, \text{ Radius} = 25$$



23 $\overline{OT}$ is $\perp$ bis of $\overline{RQ}$.

$$TQ = 5, TP = 9$$

$$TP^2 + TO^2 = PO^2$$

$$9^2 + TO^2 = 15^2$$

$$81 + TO^2 = 225$$

$$TO = \sqrt{144} = 12$$

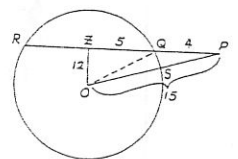
Draw radius $\overline{QO}$

$$QO^2 = TQ^2 + TO^2$$

$$QO^2 = 5^2 + 12^2$$

$$QO^2 = 25 + 144$$

$$QO = \sqrt{169} = 13$$



$\overline{QO}$ and $\overline{OS}$ are radii.

$$QO = OS = 13$$

$$PS = PO - OS$$

$$PS = 15 - 13 = 2$$

24 $AB = AC = 13$

Alt $AD = 5$

5-12-13 is a Pythagorean triple

$BD = 12$

$DO = x$

$BO = AO = x + 5$

$$(BD)^2 + (DO)^2 = (BO)^2$$

$$(12)^2 + x^2 = (x + 5)^2$$

$$144 + x^2 = x^2 + 10x + 25$$

$$119 = 10x$$

$$x = 11.9$$

$$BO = x + 5 = 11.9 + 5 = 16.9$$

