

25 In rt  $\triangle ABD$ ,  $BD^2 = AB^2 - AD^2$

In rt  $\triangle CBD$ ,  $BD^2 = BC^2 - DC^2$

$AB^2 - AD^2 = BC^2 - DC^2$

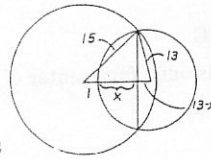
$15^2 - (x-1)^2 = 13^2 - (13-x)^2$

$225 - (x^2 - 2x + 1) = 169 - (169 - 26x + x^2)$

$225 - x^2 - 2x - 1 = 169 - 169 + 26x - x^2$

$-28x = -224$

Then  $BD = 12$ , and the common chord is 24.



4  $\overline{PM} \cong \overline{PN}$

5  $\overline{AD} \cong \overline{BC}$

6  $\overline{AD} \parallel \overline{BC}$

7  $ABCD$  is  $\square$ .

4 Mdpt divides seg into  $\cong$  parts.

5 Chords = dist from center are  $\cong$ .

6 Two lines  $\perp$  to same line are  $\parallel$ .

7 If 2 sides of a quad are  $\cong$  and  $\parallel$ , the quad is a  $\square$ .

# Pages 447-449 (Section 10.2)

1 They are the same distance from the center since  $325 \text{ cm} = 3\frac{1}{4} \text{ m}$ .

2 Since  $\overline{AB} \cong \overline{CD}$ ,

$6x + 14 = 4 - 4x$

$10x + 14 = 4$

$10x = -10$

$x = -1$

$AB = 6x + 14$

$AB = 6(-1) + 14$

$AB = -6 + 14$

$AB = 8$

3 Given:  $\odot P$

$\overline{PR} \perp \overline{WX}$

$\overline{PS} \perp \overline{XY}$

$\overline{PR} \cong \overline{PS}$

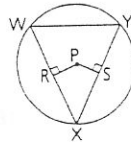
Concl:  $\angle W \cong \angle Y$

1  $\odot P$ ,  $\overline{PR} \perp \overline{WX}$

2  $\overline{PS} \perp \overline{XY}$ ,  $\overline{PR} \cong \overline{PS}$

3  $\overline{WX} \cong \overline{XY}$

4  $\angle W \cong \angle Y$



1 Given

2 Given

3 Two chords = dist from the center of a  $\odot$  are  $\cong$ .

4 If  $\triangle$  then  $\triangle$

4 Given: Equilateral  $\triangle ABC$  inscribed in  $\odot Q$ .

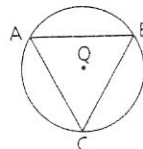
Concl:  $\overline{AB}$ ,  $\overline{BC}$ , and  $\overline{CA}$  = dist from the center.

1 Equilateral  $\triangle ABC$

inscribed in  $\odot Q$ .

2  $\overline{AB} \cong \overline{BC} \cong \overline{CA}$

3  $\overline{AB}$ ,  $\overline{BC}$ , and  $\overline{CA}$  are = dist. 3 If chords  $\cong$ , they are = dist from the center.



1 Given

2 Sides of equilateral  $\triangle$  are  $\cong$ .

5 Given:  $\odot P$

P mdpt of  $\overline{MN}$

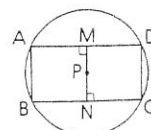
$\overline{MN} \perp \overline{AD}$  and  $\overline{BC}$

Concl:  $ABCD$  is  $\square$ .

1  $\odot P$

2 P mdpt of  $\overline{MN}$

3  $\overline{MN} \perp \overline{AD}$  and  $\overline{BC}$



1 Given

2 Given

3 Given

6 a The chord is bisected so a rt  $\triangle$  is formed with hypotenuse (radius) 10, side 6, and the distance x from center to fly.

$10^2 = 6^2 + x^2$

$100 = 36 + x^2$

$64 = x^2$

$8 \text{ cm} = x$

b Circle

7 a  $A = \pi(9.5)^2 = 283.53 \text{ sq mm}$

b  $C = \pi(19) = 59.69 \text{ mm}$

8 Given:  $\odot Q$ ,  $\overline{PS} \perp \overline{RT}$

$\overline{MQ} \perp \overline{RP}$ ,  $\overline{NQ} \perp \overline{PT}$

Prove:  $\overline{MQ} \cong \overline{NQ}$

1  $\odot Q$ ,  $\overline{PS} \perp \overline{RT}$

2  $\overline{MQ} \perp \overline{RP}$ ,  $\overline{NQ} \perp \overline{PT}$

3  $\overline{RS} \cong \overline{ST}$

4  $\overline{SP} \cong \overline{SP}$

5  $\angle QSR$  is a rt  $\angle$ .

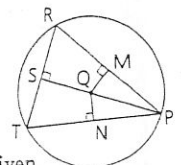
6  $\angle QST$  is a rt  $\angle$ .

7  $\angle QSR \cong \angle QST$

8  $\triangle PSR \cong \triangle PST$

9  $\overline{RP} \cong \overline{TP}$

10  $\overline{MQ} \cong \overline{NQ}$



1 Given

2 Given

3 A radius  $\perp$  to a chord bis the chord.

4 Reflexive prop

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

6 Same as 6

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

8 SAS

9 CPCTC

10  $\cong$  chords are = dist from the center.

9 Given:  $\odot F$ ,  $\overline{FE} \perp \overline{BC}$   
 $\overline{FD} \perp \overline{AB}$   
 $\overline{BF}$  bis  $\angle ABC$ .

Prove:  $\overline{BC} \cong \overline{BA}$

1  $\odot F$ ,  $\overline{FE} \perp \overline{BC}$ ,

$\overline{FD} \perp \overline{AB}$

2  $\overline{BF}$  bis  $\angle ABC$ .

3  $\angle BEF$  rt  $\angle$

4  $\angle FDB$  rt  $\angle$

5  $\angle BEF \cong \angle FDB$

6  $\angle EBF \cong \angle DBF$

7  $\overline{BF} \cong \overline{BF}$

1 Given

2 Given

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

4 Same as 3

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

6 Bis divides  $\angle$  into 2  $\cong \angle$

7 Reflexive prop

