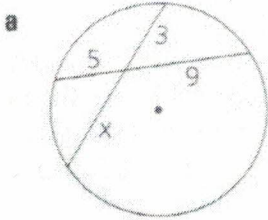


Problem Set A

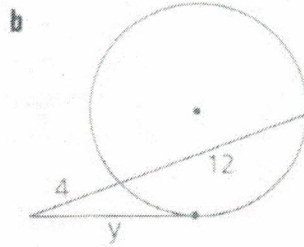
1 Solve for x, y, and z.



$$3 \cdot x = 5 \cdot 9$$

$$3x = 45$$

$$\boxed{x = 15}$$

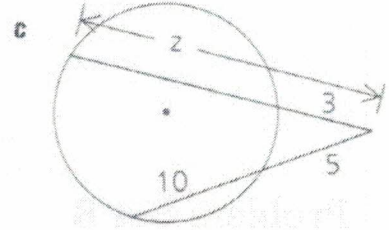


$$y^2 = 4(4+12)$$

$$y^2 = 64$$

$$y = \pm 8$$

$$\boxed{y = 8}$$



$$3 \cdot z = 5 \cdot (5+10)$$

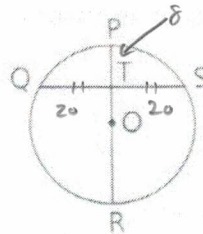
$$3z = 75$$

$$\boxed{z = 25}$$

2 T is the midpoint of \overline{QS} , $PT = 8$, and $QS = 40$.

a Find TR.

b Find the diameter of $\odot O$.



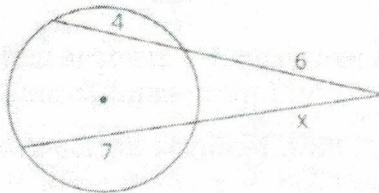
a.) $8 \cdot TR = 20 \cdot 20$

$$8 \cdot TR = 400$$

$$\boxed{TR = 50}$$

b.) $\boxed{PR = 58}$ (DIAM.)
 $8 + 50$

3 Solve for x.



$$6(6+4) = x(x+7)$$

$$60 = x^2 + 7x$$

$$x^2 + 7x - 60 = 0$$

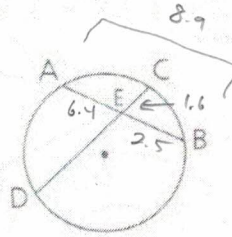
$$(x+12)(x-5) = 0$$

$$x = -12, 5$$

$$\boxed{x = 5}$$

Problem Set A

4 If $AE = 6.4$, $AB = 8.9$, and $CE = 1.6$, find ED .

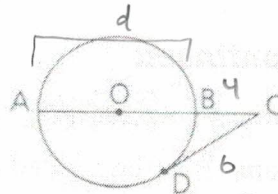


$$1.6 \cdot ED = 6.4 \cdot 2.5$$

$$1.6 ED = 16$$

$$ED = 10$$

5 \overline{AB} is a diameter of $\odot O$.
 \overline{CD} is tangent at D , $CD = 6$, and $BC = 4$.
 Find the radius of the circle.



$$6^2 = 4(4 + d)$$

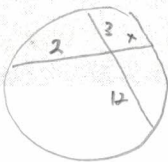
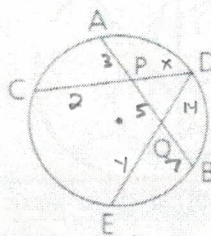
$$36 = 16 + 4d$$

$$4d = 20$$

$$d = 5$$

$$\begin{array}{l} \text{DIAM} = 5 \\ \text{RADIUS} = 2.5 \end{array}$$

6 Given: $AP = 3$, $PQ = 5$, $QB = 7$, $CP = 2$,
 $QD = 14$
 Find: PD and EQ

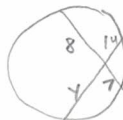


$$2x = 3 \cdot 14$$

$$2x = 36$$

$$x = 18$$

$$PD = 18$$



$$14 \cdot y = 8 \cdot 7$$

$$14y = 56$$

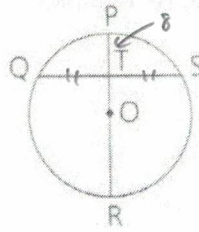
$$y = 4$$

$$EQ = 4$$

Problem Set B

1 T is the midpoint of \overline{QS} , $PT = 8$, and $QS = 40$.

- a Find TR.
- b Find the radius of $\odot O$.



a.) $8 \cdot TR = 20 \cdot 20$

$8 \cdot TR = 400$

$TR = 50$

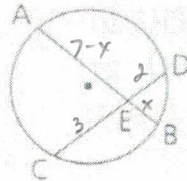
b.) $PR = 8 + 50$

$PR = 58$

$OR = 29$

$RADIUS = 29$

2 Given: $AB = 7$, $CD = 5$, $ED = 2$
Find: AE



$x(7-x) = 2 \cdot 3$

$7x - x^2 = 6$

$x^2 - 7x + 6 = 0$

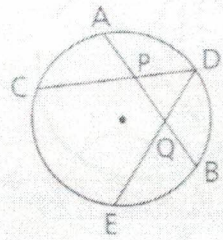
$(x-6)(x-1) = 0$

$x = 6, 1$ BOTH WORK!!

Problem Set B

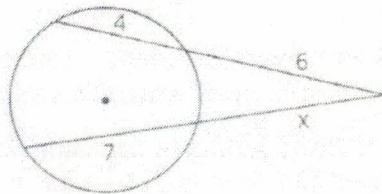
3 Given: $AP = 3$, $PQ = 5$, $QB = 7$, $CP = 2$,
 $QD = 14$

Find: PD and EQ



SEE PROBLEM SET A #6

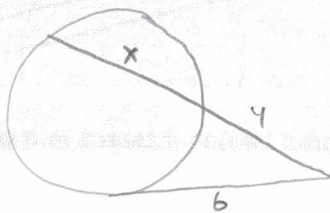
4 Solve for x .



SEE PROBLEM SET A #3

5 Given: $TZ = 6$, $YZ = 4$, $SX = 3$, $WX = 1$

Find: XT



$$6^2 = 4(4+x)$$

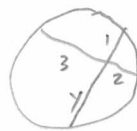
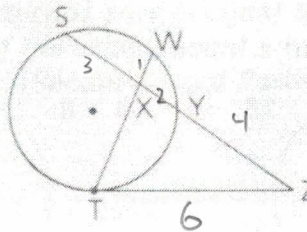
$$36 = 16 + 4x$$

$$20 = 4x$$

$$\underline{x = 5}$$

$$XY = 5 - 3$$

$$XY = 2$$



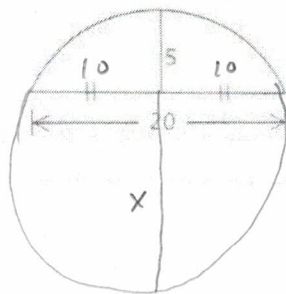
$$y - 1 = 2 \cdot 3$$

$$\underline{y = 6}$$

$$\boxed{XT = 6}$$

Problem Set C

1 An arch supports a pipeline across a river 20 m wide. Midway, the suspending cable is 5 m long. Find the radius of the arch.



$$5 \cdot x = 10 \cdot 10$$

$$5x = 100$$

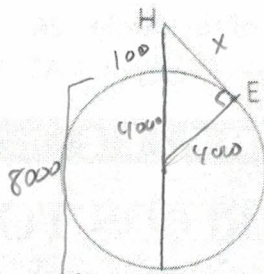
$$x = 20$$

$$\text{DIAM} = 5 + 20$$

$$= 25$$

$\text{RADIUS} = 12.5$

2 The diameter of the earth is approximately 8000 mi. Heavenly Helen, in a spaceship 100 mi above the earth, sights Earthy Ernest coming over the horizon. Approximately how far apart are Helen and Ernest?



$$x^2 = 100(100 + 8000)$$

$$x^2 = 100(8100)$$

$$x = 10(90)$$

$$x = 900$$

900 miles

ACT. METHOD

$$x^2 + 4000^2 = 4100^2$$

$$x^2 + 16,000,000 = 16,810,000$$

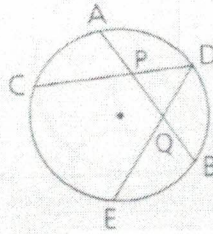
$$x^2 = 810,000$$

$$x = \underline{\underline{900}}$$

Problem Set C

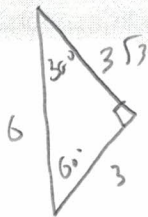
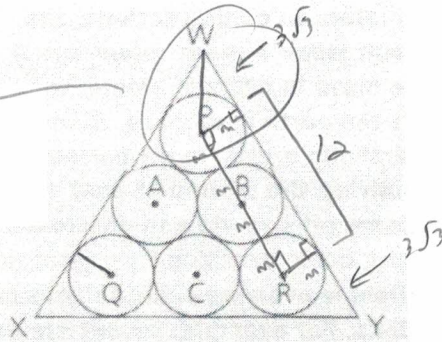
3 Given: $AP = 3$, $PQ = 5$, $QB = 7$, $CP = 2$,
 $QD = 14$

Find: PD and EQ



SEE PROBLEM SET A #6

4 The radius of each circle is 3. Triangle WXY is equilateral. Find WY.



$$WY = 3\sqrt{3} + 12 + 3\sqrt{3}$$

$$WY = 12 + 6\sqrt{3}$$

$$30-60-90$$

$$1 \quad 1\sqrt{3} \quad 2$$

$$3 \quad 3\sqrt{3} \quad 6$$