

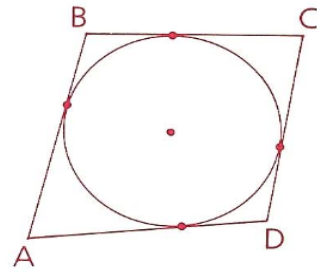
SAVE FOR TOMORROW

Problem 4

A walk-around problem:

Given: Each side of quadrilateral ABCD is tangent to the circle.
 AB = 10, BC = 15, AD = 18

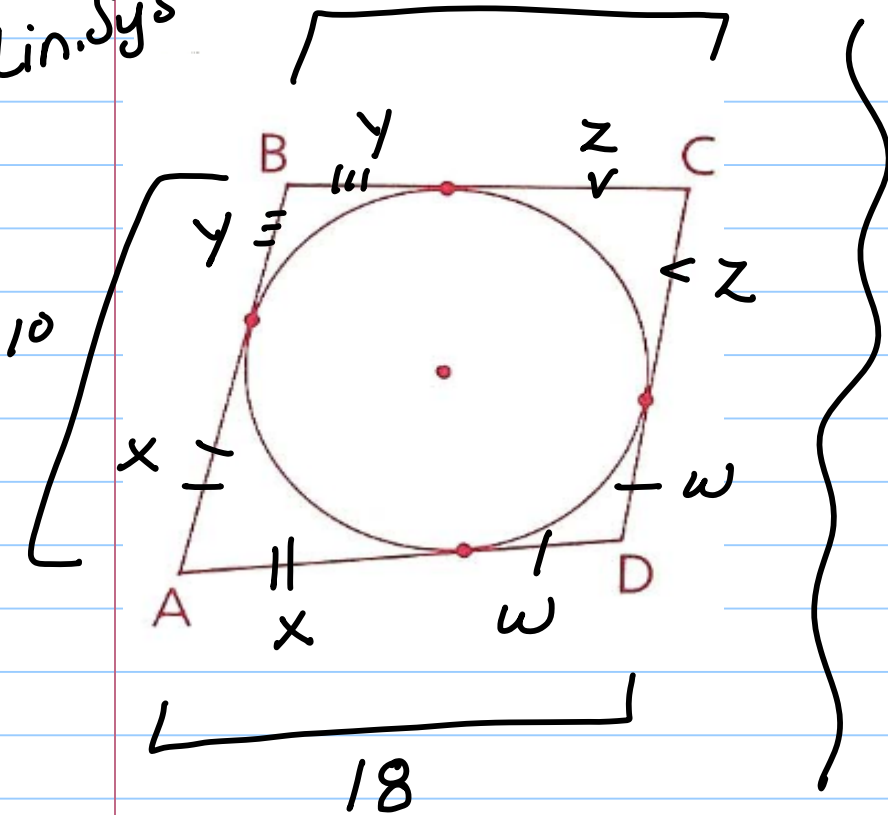
Find: CD



3/18/2016

One Vari

Lin. Sys



G:

$$\begin{aligned} x + w &= 18 \\ x + y &= 10 \\ y + z &= 15 \end{aligned}$$

F: $w + z = 18 - x$

~~$x + w = 18, x = 10 - y$~~

~~$$\begin{aligned} 10 - y + w &= 18 \\ w &= 18 - 10 + y \\ w &= 8 + y \end{aligned}$$~~

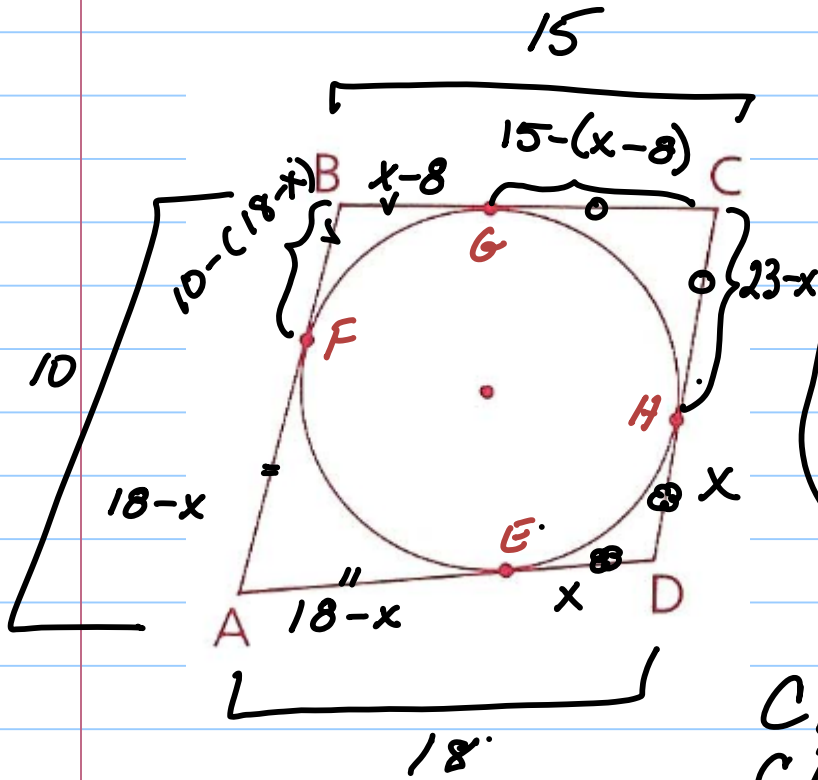
$y + z = 15, y = 10 - x$

$$\begin{aligned} 10 - x + z &= 15 \\ z &= 15 - 10 + x \\ z &= 5 + x \end{aligned}$$

F: $w + z = CD$

$$\begin{aligned} 18 - x + 5 + x &= CD \\ 18 + 5 &= CD \\ 23 &= CD \end{aligned}$$

Using Variable (like book)



F:CD

$$BA = BF + FA$$

$$10 = BF + 18 - x$$

$$x - 8 = BF = BG$$

∴ tan ⇒ seg

$$CD = CH + HD$$

$$CD = 23 - x + x$$

$$CD = 23$$

SAVE FOR TOMORROW

Problem 4

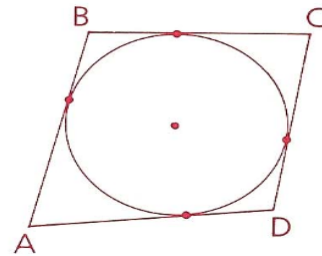
A walk-around problem:

Given: Each side of quadrilateral

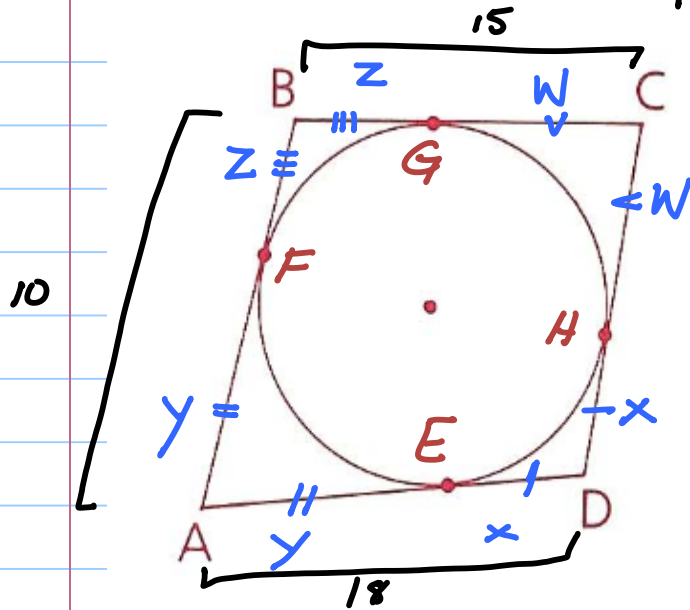
ABCD is tangent to the circle.

AB = 10, BC = 15, AD = 18

Find: CD



I. More than 1 variable : Lin System



F: CD

$$CD = CH + HD$$

$$w + x$$

$$G: x + y = 18$$

$$y + z = 10$$

$$w + z = 15$$

$$w = 15 - z$$

$$x + y = 18$$

$$y + z = 10$$

$$y = 10 - z$$

$$x + (10 - z) = 18$$

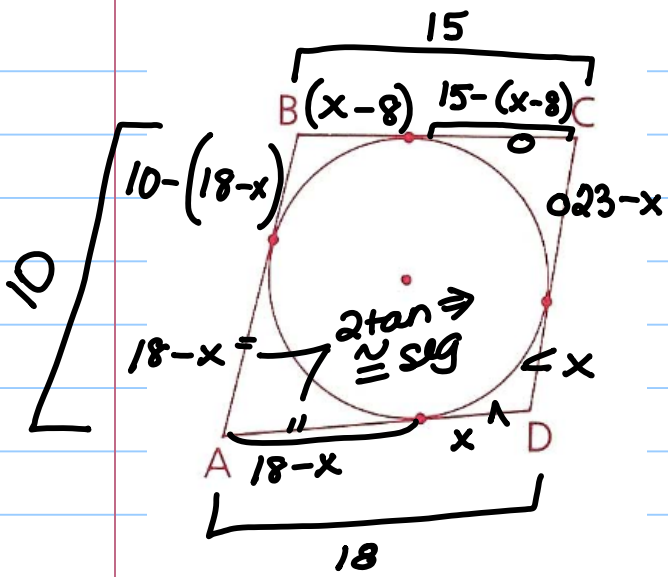
$$x + 10 - z = 18$$

$$x = 18 - 10 + z$$

$$x = 8 + z$$

$$\begin{aligned} CD &= w + x \\ &= 15 - z + 8 + z \\ &= 15 + 8 \\ &= 23 \end{aligned}$$

11: ONE VARIABLE



F:CD

$$10 - (18 - x)$$

$$10 - 18 + x$$

$$-8 + x$$

$$x - 8$$

$$CD = 23 - x + x$$

$$CD = 23$$