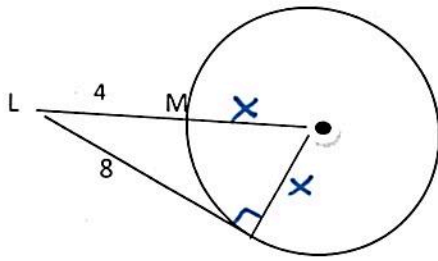


Show all work

1. Find the length of the radius.



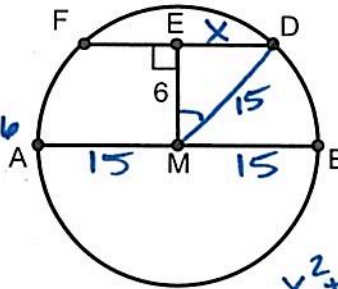
$$x^2 + 8^2 = (x+4)^2$$

$$x^2 + 64 = x^2 + 8x + 16$$

$$48 = 8x$$

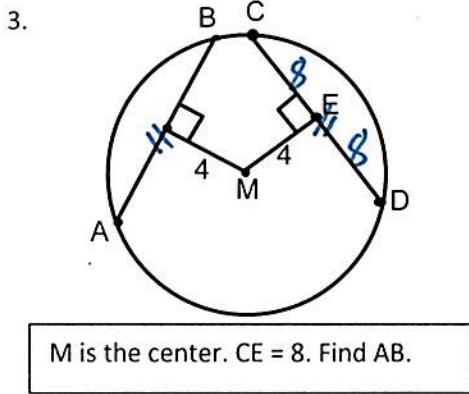
$$x = 6$$

2.



M is the center.
AB = 30. Find FD
and the
measure of
angle EMF.

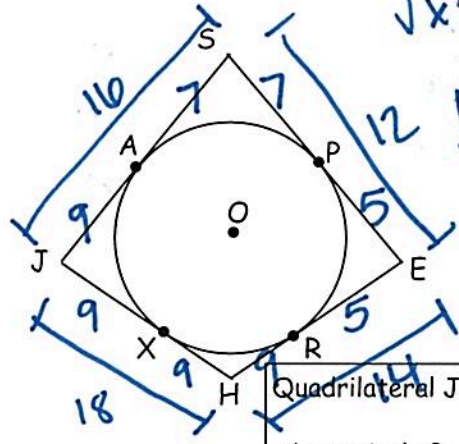
$\cos^{-1}\left(\frac{6}{15}\right)$
 $\angle EMF = 66^\circ$



M is the center. CE = 8. Find AB.

$AB = 16$

4.



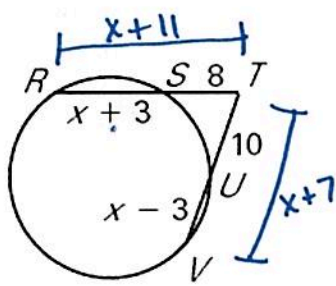
Quadrilateral JSEH is circumscribed
about circle P. JS=16,
PE=5, HJ=18, HX=9. Find the
perimeter of the quadrilateral.

$x = 13.748$
 $FD = 27.496$

$P = 60$

Show formulas and work

5. $x = 9$



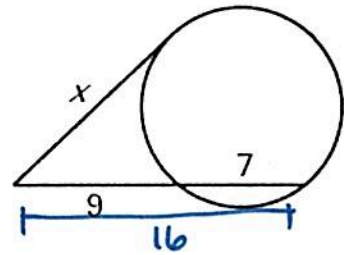
$$8(x+11) = 10(x+7)$$

$$8x + 88 = 10x + 70$$

$$18 = 2x$$

$$x = 9$$

6. $x = 12$

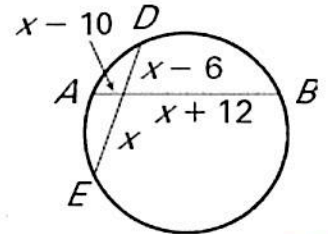


$$9(16) = x^2$$

$$\sqrt{144} = \sqrt{x^2}$$

$$x = 12$$

7. $x = 15$



$$x(x-6) = (x-10)(x+12)$$

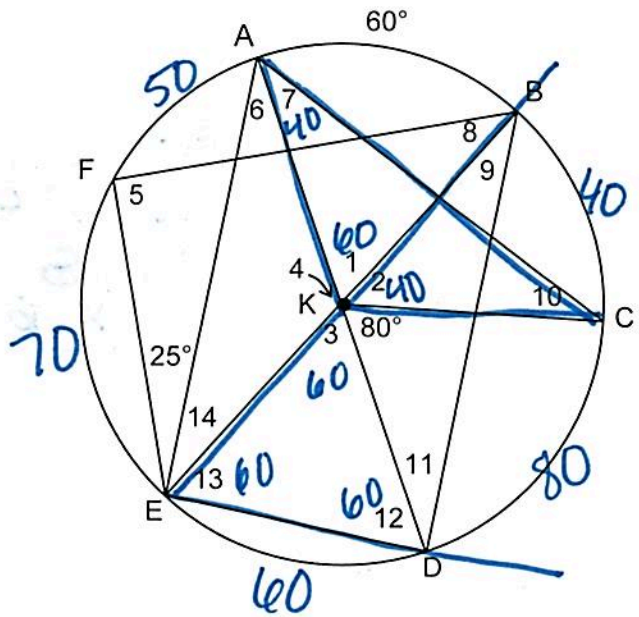
$$x^2 - 6x = x^2 + 2x - 120$$

$$-8x = -120$$

$$x = 15$$

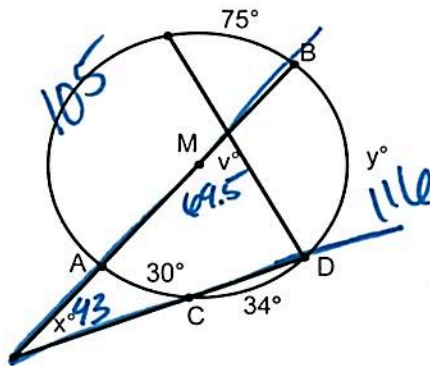
8. K is the center of the circle. Find the measure of each arc or angle.

- a) $m\widehat{BC} = 40$
- b) $m\widehat{CD} = 80$
- c) $m\widehat{DE} = 60$
- d) $m\widehat{EF} = 70$
- e) $m\widehat{FA} = 50$
- f) $m\angle 1 = 60^\circ$
- g) $m\angle 2 = 40^\circ$
- h) $m\angle 3 = 60^\circ$
- i) $m\angle 4 = 120^\circ$
- j) $m\angle 5 = \underline{\hspace{2cm}}$
- k) $m\angle 6 = 30^\circ$
- l) $m\angle 7 = 40^\circ$
- m) $m\angle 8 = 35^\circ$
- n) $m\angle 9 = 30^\circ$
- o) $m\angle 10 = 40^\circ$
- p) $m\angle 11 = 30^\circ$
- q) $m\angle 12 = 60^\circ$
- r) $m\angle 13 = 60^\circ$
- s) $m\angle 14 = 30^\circ$

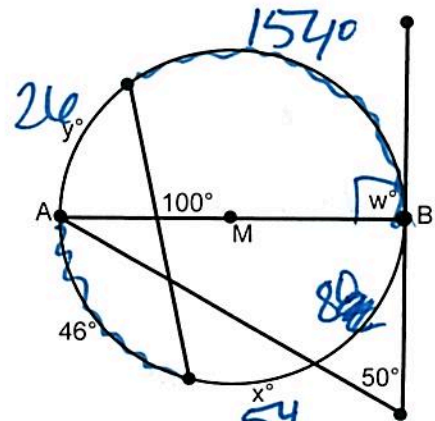


Find the missing variables..

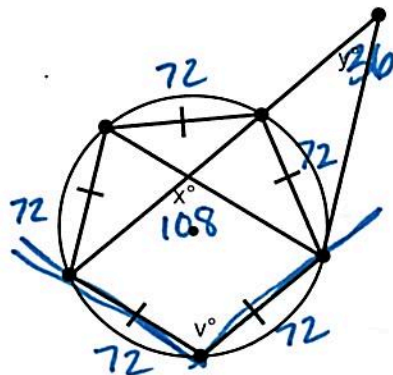
9. $x = 43^\circ$
 $v = 69.5$
 $y = 116$



10. $w = 90^\circ$
 $x = 54^\circ$
 $y = 26$



11. $v = 108$
 $x = 108$
 $y = 36$



$$\frac{1}{2}(180 - z) = 50 \cdot 2$$

$$180 - z = 100$$

$$z = 80$$