

Review Circles A – Angles & Segments

Name Huff

CCGPS Geometry

Use properties of angles to solve the following.

1. Find the following measures:

$$\angle HIE = 131^\circ$$

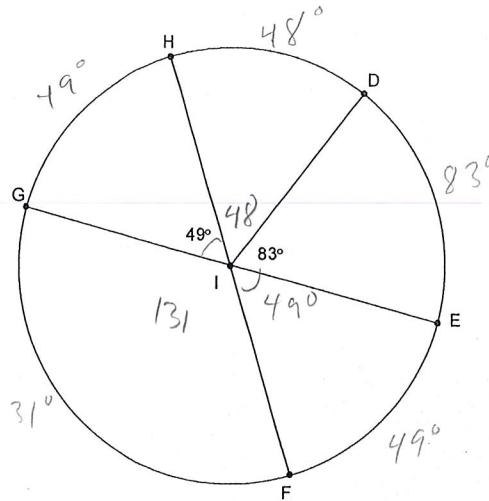
$$\overarc{FDG} = 360^\circ - 131^\circ = 229^\circ$$

$$\widehat{HD} = 48^\circ$$

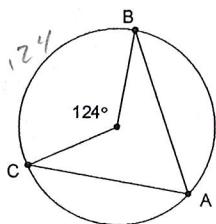
$$\angle FIE = 49^\circ$$

$$\overarc{EDG} = 180^\circ$$

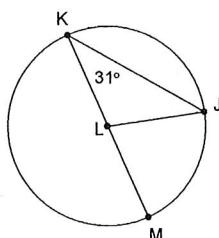
$$\overarc{HEG} = 360^\circ - 49^\circ = 311^\circ$$



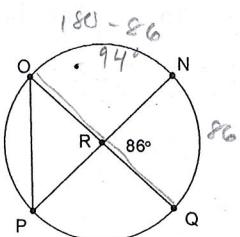
2. $m\angle BAC = \frac{124}{2} = 62^\circ$



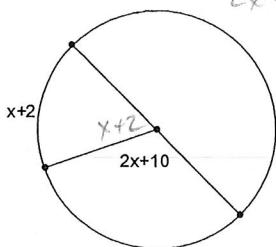
3. $m\widehat{JM} = \frac{31 \cdot 2}{2} = 62^\circ$



4. $m\angle OPN = \frac{94}{2} = 47^\circ$



5. Find x.



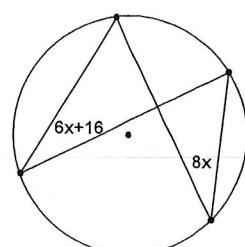
$$2x+10 + x+2 = 180$$

$$3x+12 = 180$$

$$3x = 168$$

$$x = 56$$

6. Find x.



$$2(6x+16) = 2(8x)$$

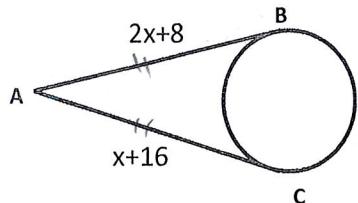
$$6x+16 = 8x$$

$$-6x \quad -6x$$

$$16 = 2x$$

$$8 = x$$

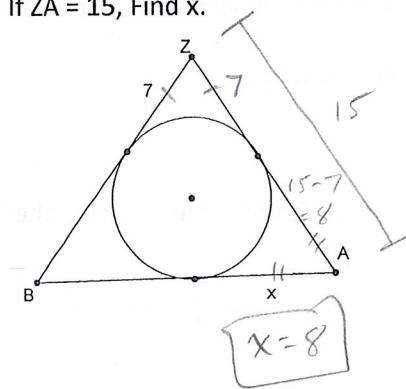
7. Find x.



$$2x+8 = x+16$$

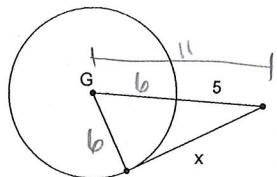
$$\boxed{x=8}$$

8. If $ZA = 15$, Find x.



$$\boxed{x=8}$$

9. The radius of Circle G is 6cm. Find x.



$$6^2 + x^2 = 11^2$$

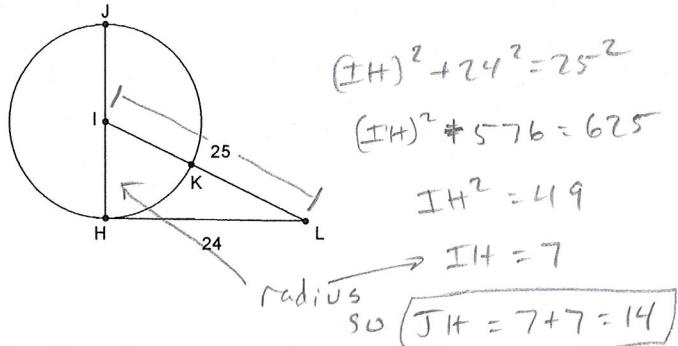
$$36 + x^2 = 121$$

$$x^2 = 85$$

$$\boxed{x = \sqrt{85}}$$

15. Find the length of the diameter \overline{JH}

Find the length of the segment \overline{KL}



$$(JI)^2 + 24^2 = 25^2$$

$$(JI)^2 + 576 = 625$$

$$JI^2 = 49$$

$$JI = 7$$

radius
so $JH = 7 + 7 = 14$

Assume that lines that appear to be tangent are tangent.

16. From #15, what's the measure of $\angle L$?

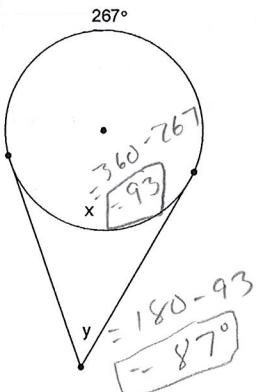
$$\cos(L) = \frac{24}{25}$$

$$\cos^{-1}\left(\frac{24}{25}\right) = L$$

$$16.3^\circ \approx L$$

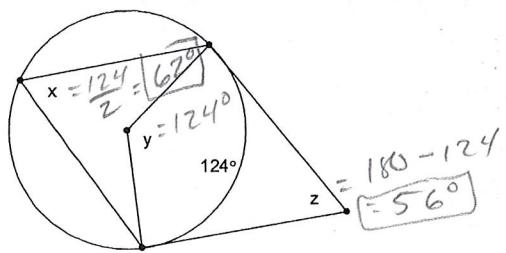
$$\boxed{KL = 25 - 7 \\ = 18}$$

17. Find x & y.



$$y = 180 - 93 \\ = 87^\circ$$

18. Find x, y, and z.



Solve for x . Assume that lines which appear tangent are tangent.

18)

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

$$4(x+4) = 36$$

$$x+4 = 9$$

$$\boxed{x=5}$$

19)

$$(14)(27) = 18x$$

$$378 = 18x$$

$$\boxed{21=x}$$

20)

$$18^2 = 12(x+12)$$

$$324 = 12(x+12)$$

$$27 = x+12$$

$$\boxed{15=x}$$

21)

$$6(x+6) = 7(12)$$

$$x+6 = 14$$

$$\boxed{x=8}$$

22)

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

$$7x+28 = 6x+36$$

$$\boxed{x=8}$$

23)

$$14(2x) = 16(x+9)$$

$$28x = 16x + 144$$

$$12x = 144$$

$$\boxed{x=12}$$

24)

$$7(x+5) = 6(x+7)$$

$$7x+35 = 6x+42$$

$$\boxed{x=7}$$

25)

$$x^2 = 4(9)$$

$$x^2 = 36$$

$$\sqrt{x^2} = \sqrt{36}$$

$$\boxed{x=6}$$

Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

26) Find TU

$$8(2x) = 7(16)$$

$$16x = 16 \cdot 7$$

$$\boxed{x=7}$$

$$TU = 2(7)-8$$

$$= 6$$

27) Find DJ

$$6(x+3) = 7(12)$$

$$x+3 = 14$$

$$\boxed{x=11}$$

$$DJ = (11)+3$$

$$= 14$$

19. Find the measures of the angles

$$\angle A = 180 - 121 = 59^\circ$$

$$\angle B = 2(28) - 4 = 52^\circ$$

$$\angle D = 180 - 52 = 128^\circ$$

$$\text{OR } 4(28) + 16 = 128^\circ$$

$$4x + 16 + 2x - 4 = 180$$

$$6x + 12 = 180$$

$$6x = 168$$

$$x = 28$$

