Unit 4-13 Test: Circles REVIEW QUESTIONS

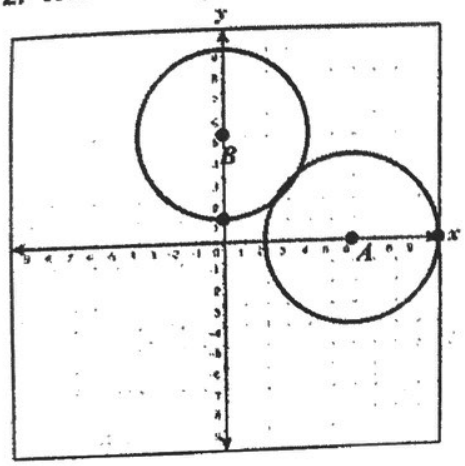
1. Determine the center and radius of the given circles.

a) $(x-7)^2+(y+10)^2=81$ Center (7, -10) Radius = 9

b) $100=(x+3)^2+y^2$ Center (-3, 0) Radius = 10

c) $(x-9)^2+(y+2)^2=1$ Center (9, -2) Radius = 1

2. Write the equation of each circle



circle A: $(x-6)^2+y^2=16$

circle B: $x^2+(y-5)^2=16$

3. Write the equation of each circle

a) Radius = 7 cm Center (-3,6) $(x+3)^2+(y-6)^2=49$

b) Center (1, 6) passing through (-3, 3) $(x-1)^2+(y-6)^2=25$

$r=5$

c) Endpoints of diameter are (0, -2) and (4, -4) $(x-2)^2+(y+3)^2=5$

C (2, -3) $r=\sqrt{5}$

d) Radius = 10 cm C (3,-3)

$(x-3)^2+(y+3)^2=100$

4. What are the center and radius of each circle

a) $x^2-14x+y^2-2y-50=0$

$(x-7)^2+(y-1)^2=100$

center: (7, 1)

radius: 10

b) $x^2+y^2+18x+17=0$

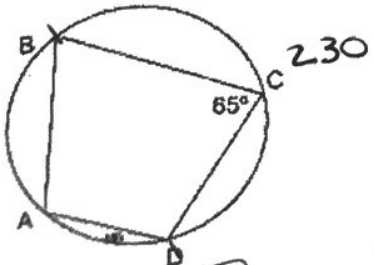
$(x+9)^2+y^2=64$

center: (-9, 0)

radius: 8

5.

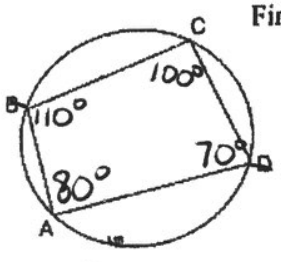
a. Find $m\angle A$.



$m\angle A=115°$

b. $m\angle B=110°$ and $m\angle C=100°$.

Find $m\widehat{BCD}$. $=160°$



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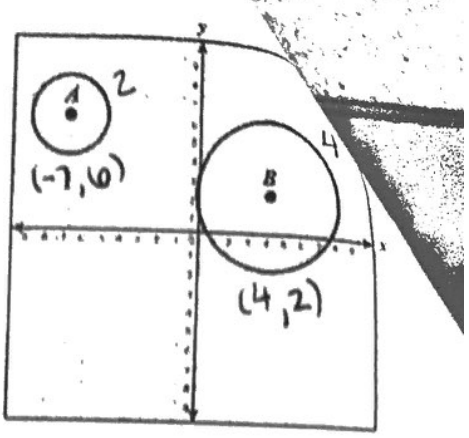
6. Determine the translation vector and scale factor of the dilation for the following similarity transformations.

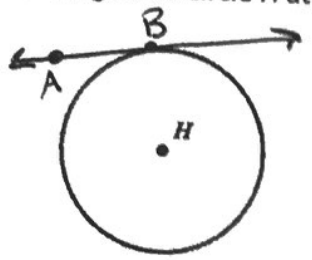


Translate Vector: $\langle 11, -4 \rangle$

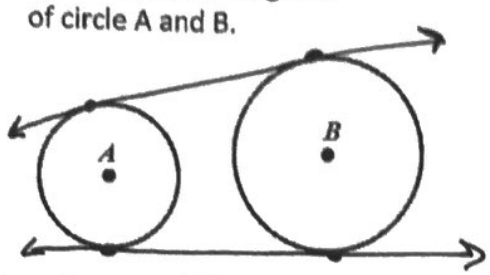
$D_{B,2}(\odot A) = \odot B$

7. Draw the following relationships.

a) $\overline{AB}$ tangent to circle H at B.

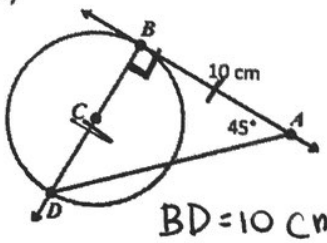


b) The external tangents of circle A and B.



8. Solve for the missing information, given the $\overline{AB}$ is a tangent line to circle C.

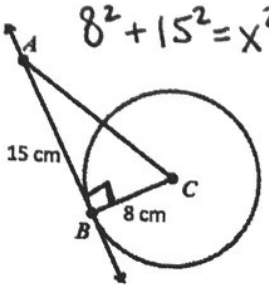
a)



BD = 10 cm

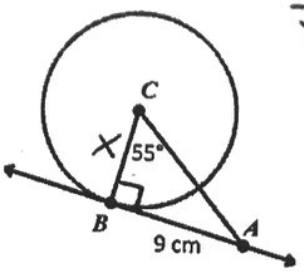
CB = 5 cm

b) $8^2 + 15^2 = x^2$



AC = 17 cm

c) $\tan 55 = \frac{9}{x}$

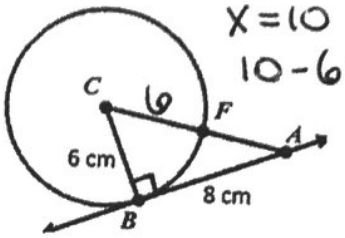


CB = 6.30 cm

d) $6^2 + 8^2 = x^2$

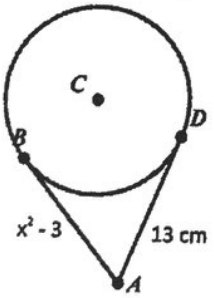
$x = 10$

$10 - 6 = 4$



FA = 4 cm

9. Solve for x ($\overline{AB}$ and $\overline{AD}$ are tangent lines)

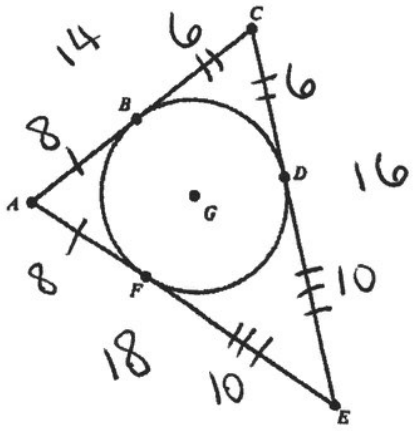


$x^2 - 3 = 13$

$\sqrt{x^2} = \sqrt{16}$

$x = \pm 4$ cm

10. AC = 14 cm, CE = 16 cm and EA = 18 cm. Determine AB, CD and FE.



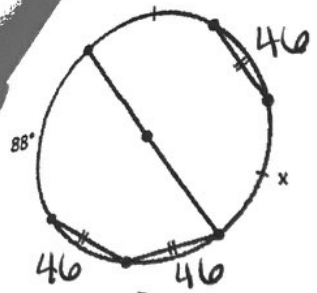
AB = 8

CD = 6

FE = 10

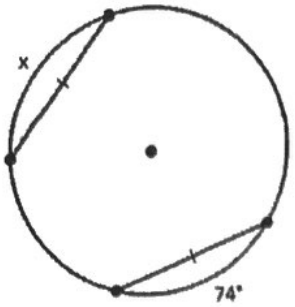
...ve for x.

a)



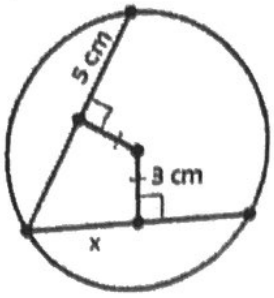
x = 67°

b)



x = 74°

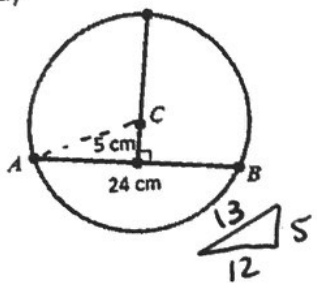
c)



x = 5 cm

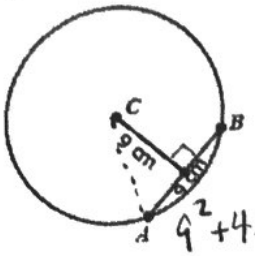
12. Determine the length of radius $\overline{AC}$.

a)



AC = 13 cm

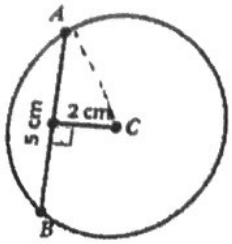
b)



$9^2+4.5^2=x^2$

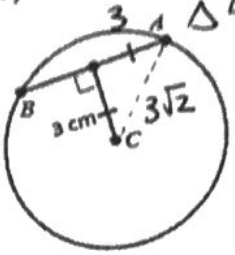
AC = 10.06 cm (2 dec.)

c) $2.5^2+2^2=x^2$



AC = 3.20 cm (2 dec.)

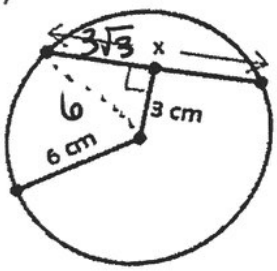
d) Δ45-45-90



AC = $3\sqrt{2}$ cm (E)

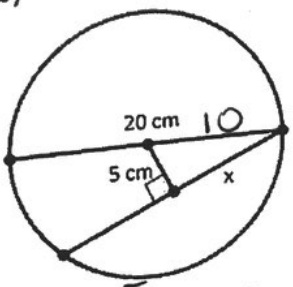
13. Find x in simplest radical form.

a)



x = $6\sqrt{3}$ cm

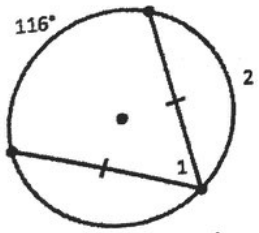
b)



x = $5\sqrt{3}$ cm (E)

14. Find the measure of each angle or arc.

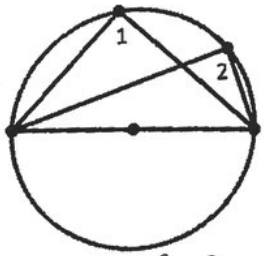
a)



m∠1 = 58°

$m\overset{\frown}{2}$ = 122°

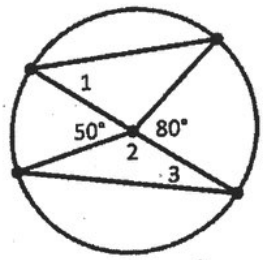
b)



m∠1 = 90°

m∠2 = 90°

c)

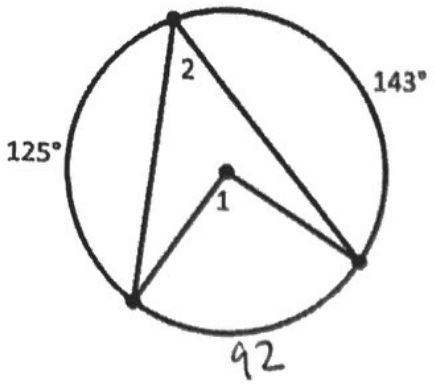


m∠1 = 40°

m∠2 = 130°

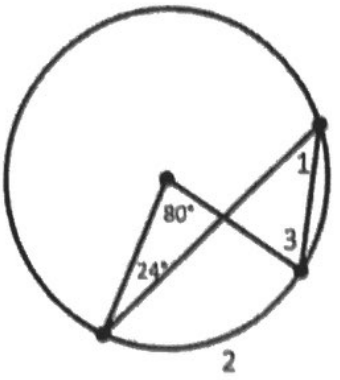
m∠3 = 25°

d)



m∠1 = 92° m∠2 = 46°

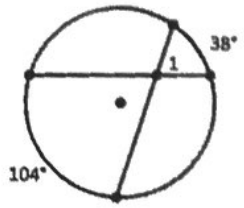
e)



m∠1 = 40°
$m\hat{2}$ = 80°
m∠3 = 64°

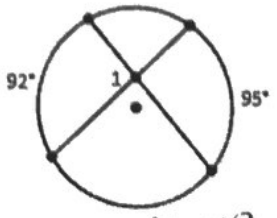
15. Determine the requested value(s). (Lines that appear to be tangent are tangent.)

a)



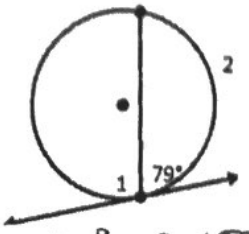
m∠1 = 71°

b)



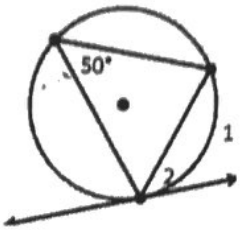
m∠1 = 93.5°

c)



m∠1 = 101° $m\hat{2}$ = 158°

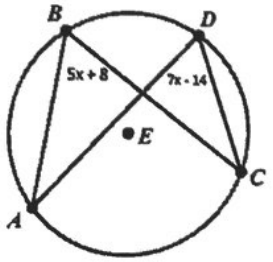
d)



$m\hat{1}$ = 100° m∠2 = 50°

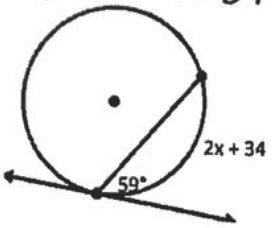
16. Determine the requested value(s). (Lines that appear to be tangent are tangent.)

a) $5x+8=7x-14$



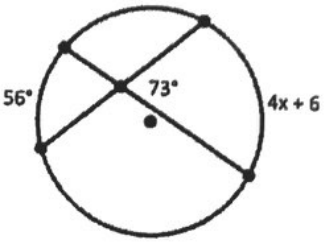
x = 11 m∠ABC = 63°

b) $2(59)=2x+34$



x = 42

c)



x = 21

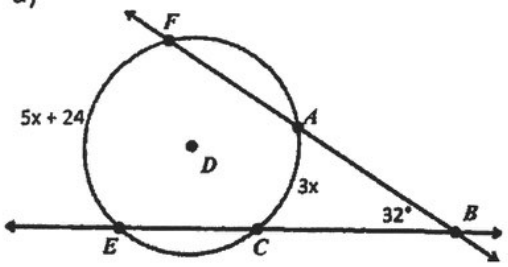
$73=\frac{1}{2}(56+4x+6)$

$146=62+4x$

$84=4x$

$21=x$

d)



$32=\frac{1}{2}(5x+24-3x)$

$64=2x+24$

$40=2x$

$20=x$

x = 20 $m\overset{\frown}{EF}$ = 124°

...ive for the missing values.

a) m∠1 = 60°

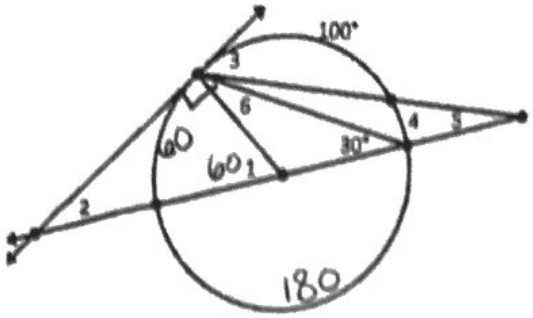
b) m∠2 = 30°

c) m∠3 = 50°

d) $m\hat{4}$ = 20°

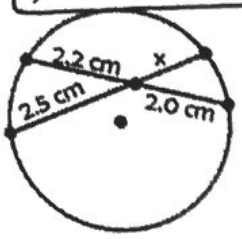
e) m∠5 = 20°

f) m∠6 = 30°

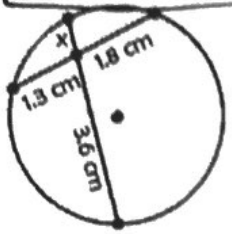


18. Solve for x

a) X = 1.76 cm



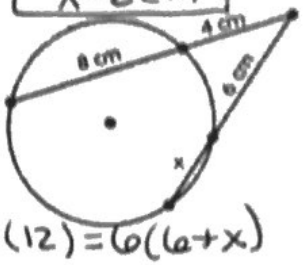
b) X = 0.65 cm



c) X = 1.728 cm

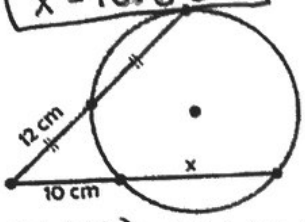
3.6(1.2) = 2.5(x + 8)

d) X = 2 cm



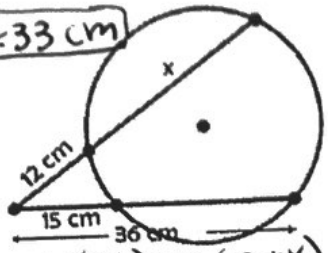
4(12) = 6(6+x)

e) X = 18.8 cm



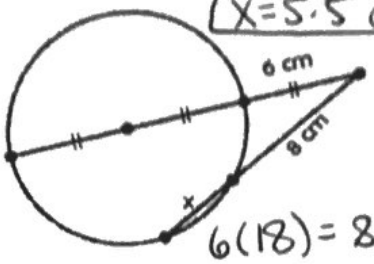
12(24) = 10(10+x)

f) X = 33 cm



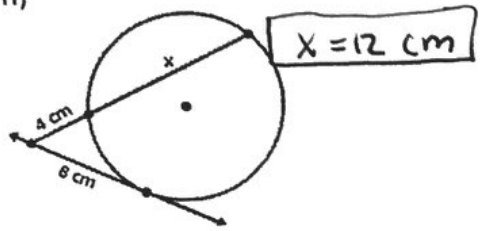
15(36) = 12(12+x)

X = 5.5 cm



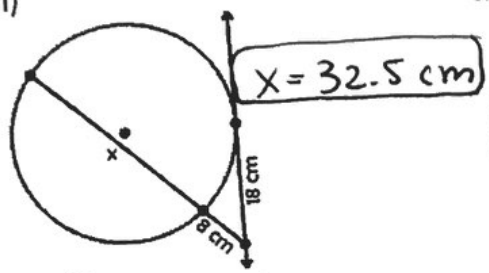
6(18) = 8(8+x)

h) X = 12 cm



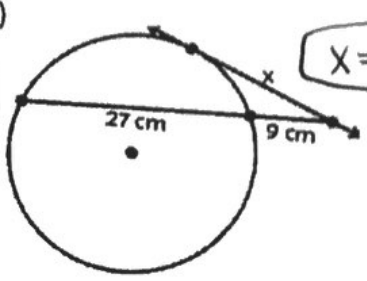
$8^2 = 4(4+x)$

i) X = 32.5 cm



$18^2 = 8(8+x)$

j) X = 18 cm



$x^2 = 9(36)$