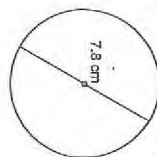
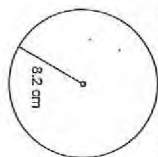


or \*1-8, use the  $\pi$  button and round to the nearest tenth when necessary.

1) Find the area.



2) Find the circumference.



3) area =  $16.6 \text{ mi}^2$

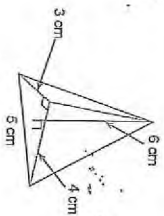
Find the diameter.

4) circumference = 44 mi

Find the radius.

For \*5-8, find the volume.

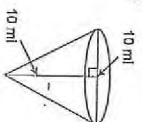
5)



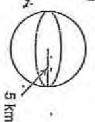
6)



7)

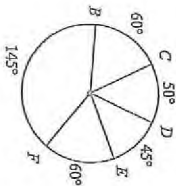


8)

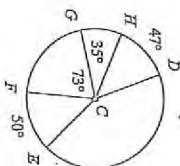


Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

9)  $m\angle EBD$

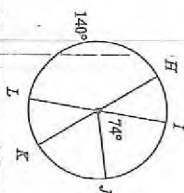


10)  $m\angle GCD$



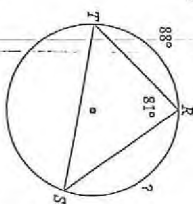
-1-

11)  $m\angle K$

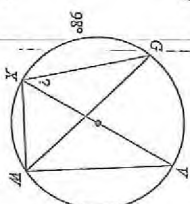


Find the measure of the arc or angle indicated.

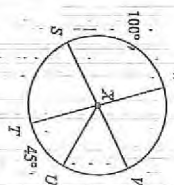
13)



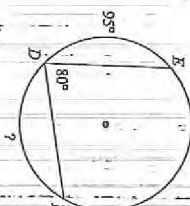
15)



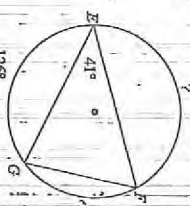
12)  $m\angle WXU$



14)

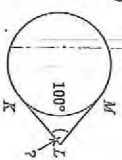


16)



Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

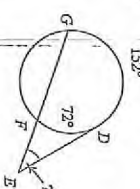
17)



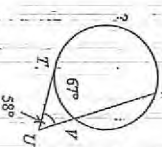
18) Find  $m\angle ABC$ .



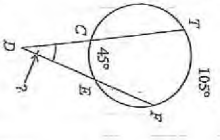
19)



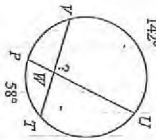
20)



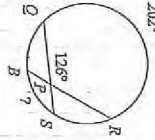
21)



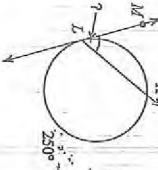
23)



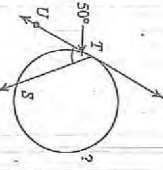
25)



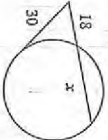
27)



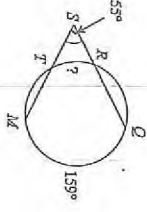
29)



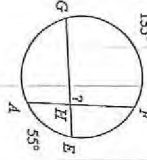
31)



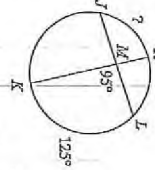
22)



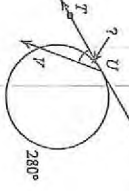
24)



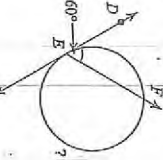
26)



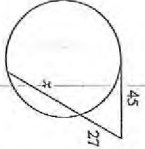
28)



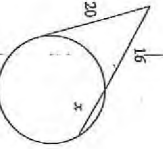
30)



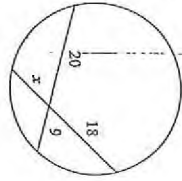
32)



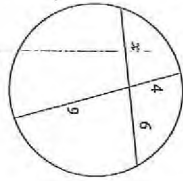
33)



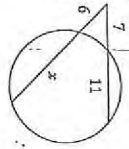
35)



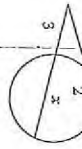
37)



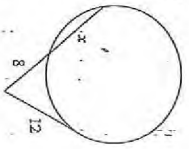
39)



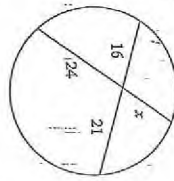
41)



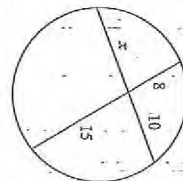
34)



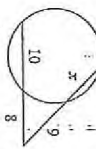
36)



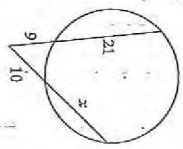
38)



40)

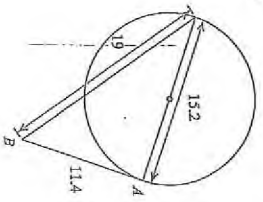


42)

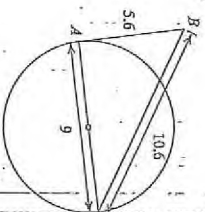


Determine if line AB is tangent to the circle.

43)

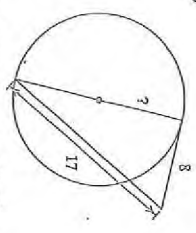


44)

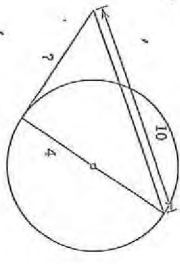


Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

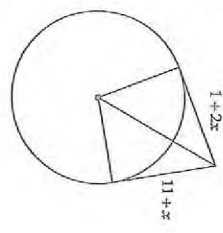
45)



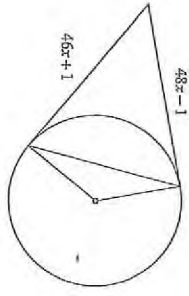
46)



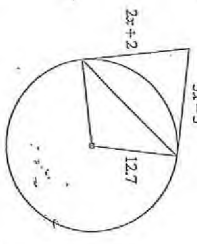
47)



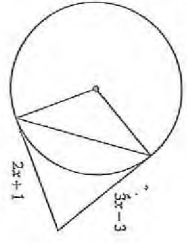
48)



49)

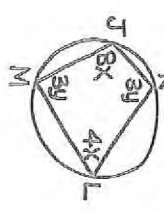


50)

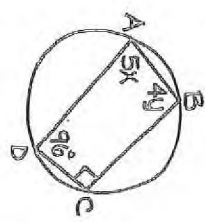


Find the value of each variable.

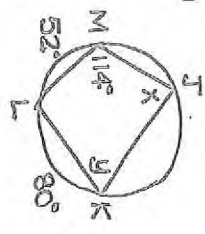
51)



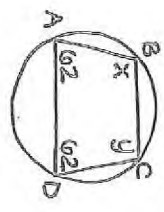
52)



53)

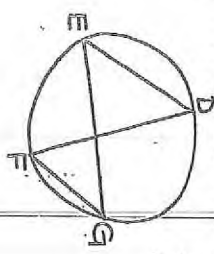


54)

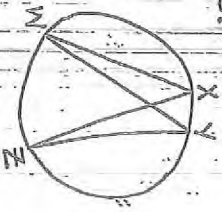


Name two pairs of congruent angles.

55)



56)



57)

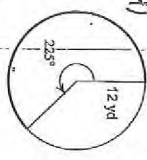
The dimensions of a triangular pyramid change by a factor of 8. By what factor does the volume of this triangular pyramid change?

58)

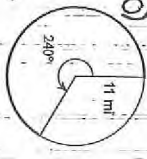
The radius of a sphere changes by a factor of 6. By what factor does the volume of this sphere change?

Find the length of each arc. Round your answers to the nearest tenth.

59)

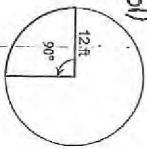


60)

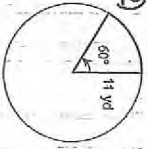


Find the area of each sector. Round your answers to the nearest tenth.

61)

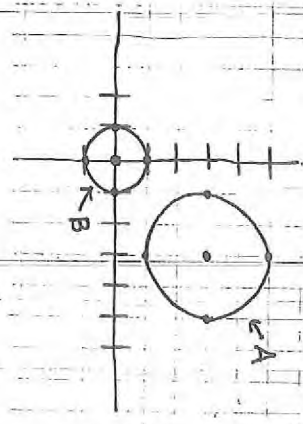


62)

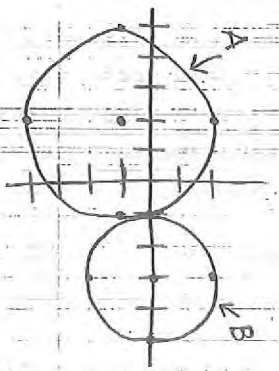


63) Prove that circle A is similar to circle B.

i)



ii)

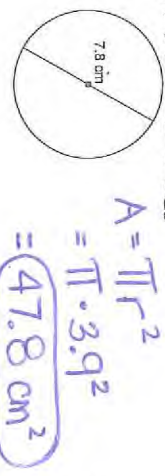


1. 47.8	25. 50	49. 7
2. 51.5	26. 65	50. 4
3. 4.6	27. 55	51. $x=15, y=30$
4. 7	28. 40	52. $x=18, y=21$
5. 12	29. 250	53. $x=y=66$
6. 150.8	30. 240	54. $x=y=118$
7. 261.8	31. 32	55. $\angle D \cong \angle G$
8. 523.6	32. 48	$\angle E \cong \angle F$
9. 255	33. 9	56. $\angle W \cong \angle Z$
10. 82	34. 10	$\angle X \cong \angle Y$
11. 140	35. 10	57. 512
12. 135	36. 14	58. 216
13. 110	37. 6	59. 47.1
14. 105	38. 12	60. 46.1
15. 41	39. 15	61. 113.1
16. 152	40. 7	62. 63.4
17. 80	41. 5	63. $\odot A$ dilated by
18. 120	42. 17	$\frac{1}{2} + \downarrow 3, \leftarrow 3$
19. 40	43. yes	to create $\odot B$ .
20. 183	44. yes	64. $\odot A$ dilated by
21. 30	45. 7.5	$\frac{2}{3}, \uparrow 1 + \rightarrow 5$
22. 49	46. 6	to create $\odot B$
23. 100	47. 10	
24. 95	48. 1	

don't have to do!

or \*1-8, use the  $\pi$  button and round to the nearest tenth when necessary.

1) Find the area.



2) Find the circumference.



3) area = 16.6 mi<sup>2</sup>

Find the diameter.

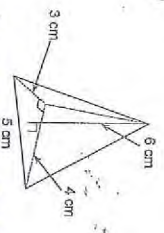
$16.6 = \frac{\pi r^2}{2}$   
 $2.3 = r^2$   
 $4.6 = d$   
 For #5-8, find the volume.

4) circumference = 44 mi

Find the radius.

$44 = 2\pi r$   
 $7 = r$

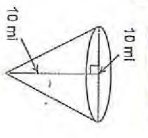
5)



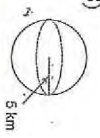
6)



7)



8)



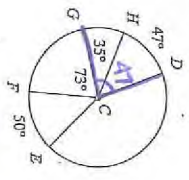
Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

9)  $m\angle BFD$



$50^\circ + 60^\circ + 145^\circ = 255^\circ$

10)  $m\angle GCD$



$35^\circ + 47^\circ = 82^\circ$

11)  $m\angle LHK$  is a diameter



$74^\circ + 66^\circ = 140^\circ$

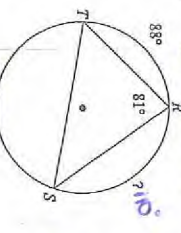
12)  $m\angle RXU$  +  $\angle SV$  is a diameter



$80^\circ + 55^\circ = 135^\circ$

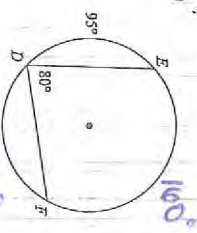
Find the measure of the arc or angle indicated.

13)



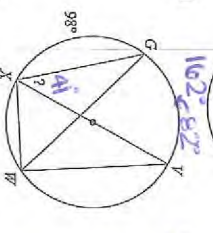
$81^\circ \cdot 2 = 162^\circ$

14)



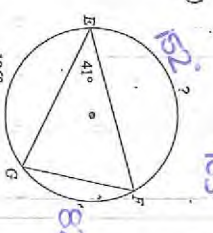
$360^\circ - 88^\circ - 162^\circ = 110^\circ$

15)



$82^\circ \cdot 2 = 164^\circ$

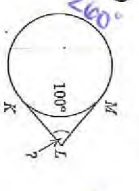
16)



$41^\circ \cdot 2 = 82^\circ$

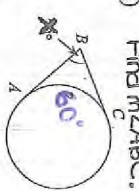
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

17)



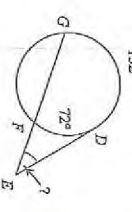
$X = \frac{1}{2} (200 - 100) = 50^\circ$

18)



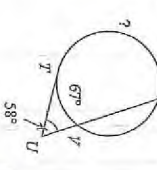
$X = \frac{1}{2} (300 - 60) = 120^\circ$

19)



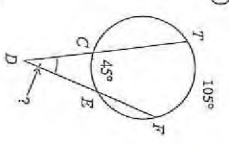
$\frac{1}{2} (152 - 72) = 40^\circ$

20)



$91.5 = \frac{1}{2} X$   
 $183^\circ = X$

21)

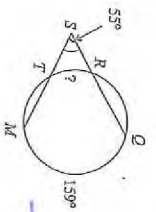


$$\frac{1}{2}(105 - 45)$$

$$\frac{1}{2}(60)$$

$$(30^\circ)$$

22)



$$55 = \frac{1}{2}(159 - x)$$

$$55 = 79.5 - \frac{1}{2}x$$

$$-79.5 - 79.5$$

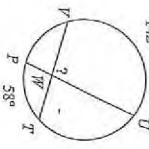
$$-24.5 = -\frac{1}{2}x$$

$$\frac{49^\circ}{-1/2} = x$$

$$\frac{1}{2}(135 + 55)$$

$$\frac{1}{2}(190) = 95^\circ$$

23)

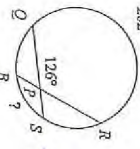


$$\frac{1}{2}(142 + 58)$$

$$\frac{1}{2}(200)$$

$$(100^\circ)$$

24)



$$126 = \frac{1}{2}(202 + x)$$

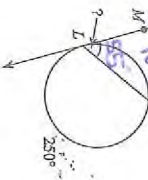
$$126 = 101 + \frac{1}{2}x$$

$$-101 - 101$$

$$25 = \frac{1}{2}x$$

$$\frac{50^\circ}{2} = x$$

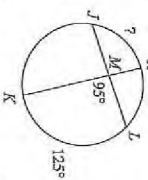
25)



$$360 - 250 = 110^\circ$$

$$110 \div 2 = 55^\circ$$

26)



$$95 = \frac{1}{2}(x + 125)$$

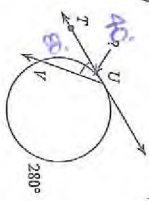
$$95 = \frac{1}{2}x + 62.5$$

$$-62.5 - 62.5$$

$$32.5 = \frac{1}{2}x$$

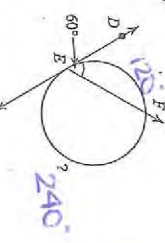
$$65 = x$$

27)



$$360 - 280 = 80^\circ$$

$$80 \div 2 = 40^\circ$$

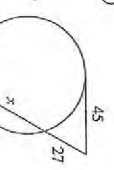


$$360 - 240 = 120^\circ$$

$$60 \div 2 = 30^\circ$$

$$240^\circ$$

28)



$$45^2 = (27 + x) \cdot 27$$

$$2025 = 729 + 27x$$

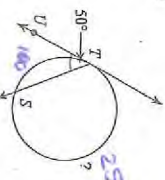
$$-729 - 729$$

$$1296 = 27x$$

$$\frac{1296}{27} = \frac{27x}{27}$$

$$48 = x$$

29)

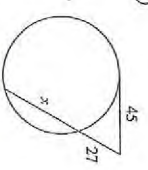


$$50 \cdot 2 = 100^\circ$$

$$360 - 100 = 260^\circ$$

$$260^\circ$$

30)



$$30^2 = (18 + x) \cdot 18$$

$$900 = 324 + 18x$$

$$-324 - 324$$

$$576 = 18x$$

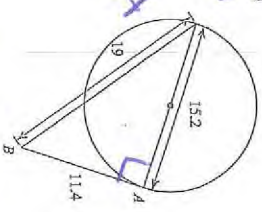
$$\frac{576}{18} = \frac{18x}{18}$$

$$32 = x$$

YOU DO NOT HAVE TO KNOW HOW TO DO #43-44

43)

Determine if line AB is tangent to the circle.



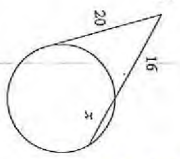
$$15.2^2 + 11.4^2 = 19^2$$

$$231.04 + 129.96 = 361$$

$$361 = 361 \checkmark$$

YES! b/c the Pythagorean Theorem applies, so angle A is a right angle.

34)



$$20^2 = (16 + x) \cdot 16$$

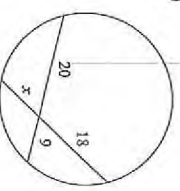
$$400 = 256 + 16x$$

$$-256 - 256$$

$$144 = 16x$$

$$\frac{144}{16} = \frac{16x}{16}$$

$$9 = x$$



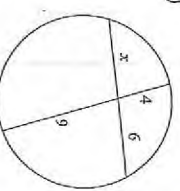
$$20 \cdot 9 = 18 \cdot x$$

$$180 = 18x$$

$$\frac{180}{18} = \frac{18x}{18}$$

$$10 = x$$

35)



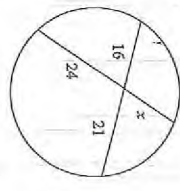
$$4 \cdot 9 = 6 \cdot x$$

$$36 = 6x$$

$$\frac{36}{6} = \frac{6x}{6}$$

$$6 = x$$

36)



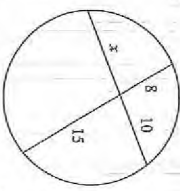
$$21 \cdot 16 = 24 \cdot x$$

$$336 = 24x$$

$$\frac{336}{24} = \frac{24x}{24}$$

$$14 = x$$

37)



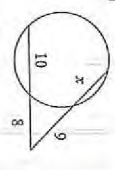
$$x \cdot 10 = 8 \cdot 15$$

$$10x = 120$$

$$\frac{120}{10} = \frac{10x}{10}$$

$$12 = x$$

38)



$$(x+9) \cdot 9 = (10+8) \cdot 8$$

$$9x + 81 = 18 \cdot 8$$

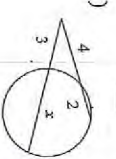
$$9x + 81 = 144$$

$$9x = 63$$

$$\frac{63}{9} = \frac{9x}{9}$$

$$7 = x$$

39)



$$(7+11) \cdot 7 = (6+x) \cdot 6$$

$$18 \cdot 7 = 36 + 6x$$

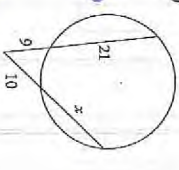
$$126 = 36 + 6x$$

$$90 = 6x$$

$$\frac{90}{6} = \frac{6x}{6}$$

$$15 = x$$

40)



$$(21+9) \cdot 9 = (10+x) \cdot 10$$

$$30 \cdot 9 = 100 + 10x$$

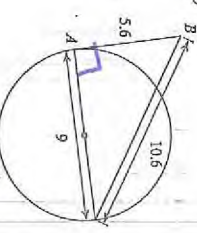
$$270 = 100 + 10x$$

$$170 = 10x$$

$$\frac{170}{10} = \frac{10x}{10}$$

$$17 = x$$

41)



$$5 \cdot 6^2 + 9^2 = 10 \cdot 6^2$$

$$31 \cdot 36 + 81 = 112 \cdot 36$$

$$112 \cdot 36 = 112 \cdot 36 \checkmark$$

YES! b/c the Pythagorean Theorem applies, so angle A is a right angle.

Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

45)  $8^2 + y^2 = 17^2$   
 $64 + y^2 = 289$   
 $y^2 = 225$   
 $y = 15$   
 $15 \div 2 = 7.5$

46)  $x^2 + 8^2 = 10^2$   
 $x^2 + 64 = 100$   
 $x^2 = 36$   
 $x = 6$

47)  $1+2x = 11+x$   
 $-x = -x$   
 $1+x = 11$   
 $-1 = -1$   
 $x = 10$

48)  $48x-1 = 46x+1$   
 $-46x = -46x$   
 $2x-1 = 1$   
 $+1 = +1$   
 $2x = 2$   
 $x = 1$

49)  $3x-5 = 2x+2$   
 $-2x = -2x$   
 $x-5 = 2$   
 $+5 = +5$   
 $x = 7$

50)  $3x-3 = 2x+1$   
 $-2x = -2x$   
 $x-3 = 1$   
 $+3 = +3$   
 $x = 4$

Find the value of each variable.

51)  $4x+8x = 180$  (52)  
 $12x = 180$   
 $x = 15$   
 $3y+3y = 180$   
 $6y = 180$   
 $y = 30$

53)  $132 = 2 = x$  (54)  
 $x = 66$   
 $114 + y = 180$   
 $y = 66$

52)  $5x+9 = 180$   
 $5x = 90$   
 $x = 18$   
 $4y+9 = 180$   
 $4y = 171$   
 $y = 21$

53)  $x+62 = 180$   
 $x = 118$   
 $y+62 = 180$   
 $y = 118$

Name two pairs of congruent angles.

55)  $\angle D \cong \angle G$   
 $\angle E \cong \angle F$

56)  $\angle W \cong \angle Z$   
 $\angle X \cong \angle Y$

57) The dimensions of a triangular pyramid change by a factor of 8. By what factor does the volume of this triangular pyramid change? 512 (8<sup>3</sup>)

58) The radius of a sphere changes by a factor of 6. By what factor does the volume of this sphere change? 216 (6<sup>3</sup>)

Find the length of each arc. Round your answers to the nearest tenth.

59)  $\frac{225}{360} \cdot 2\pi \cdot 12$   
47.1 yd

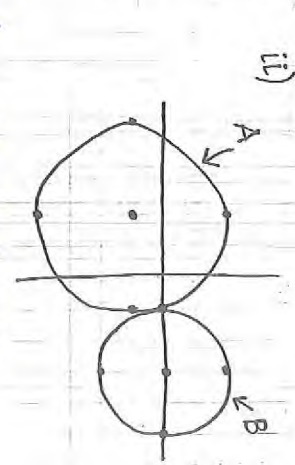
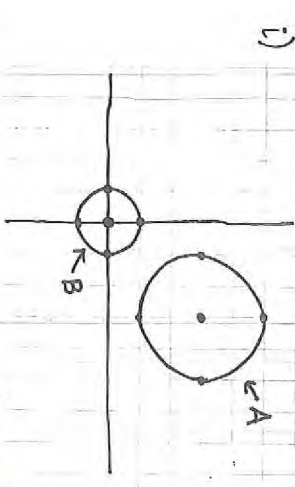
60)  $\frac{240}{360} \cdot 2\pi \cdot 11$   
46.1 mi

Find the area of each sector. Round your answers to the nearest tenth.

61)  $\frac{90}{360} \cdot \pi \cdot 12^2$   
113.1 ft<sup>2</sup>

62)  $\frac{60}{360} \cdot \pi \cdot 11^2$   
63.4 yd<sup>2</sup>

63) prove that circle A is similar to circle B.



circle A was dilated by a factor of  $\frac{1}{2}$ , translated down 3 units + left 3 units to create circle B.

circle A was dilated by  $\frac{2}{3}$ , translated up 1 unit + right 5 units to create circle B.