

Unit 4 Test Review

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

1) x

$75 = \frac{1}{2}(x - (360 - x))$
 $75 = \frac{1}{2}(x - 360 + x)$
 $75 = \frac{1}{2}(2x - 360)$
 $75 = x - 180$
 $+180 \quad +180$
 $x = 255^\circ$

2) $360 - 115 = 245^\circ$

$x = \frac{1}{2}(245 - 115)$
 $x = \frac{1}{2}(130) = 65^\circ$

3)

$x = \frac{1}{2}(160 - 86)$
 $x = \frac{1}{2}(74) = 37^\circ$

4)

$x = \frac{1}{2}(204 - 72)$
 $x = \frac{1}{2}(132) = 66^\circ$

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

5)

$x^2 = 6.4^2 + 4.8^2$
 $x^2 = 64$
 $x = 8$

6)

$x^2 + 8.7^2 = 14.5^2$
 $x^2 = 134.56$
 $x = 11.6$

Find the measure of the arc or angle indicated.

7)

$2(75) = x$
 $x = 150^\circ$

8)

$50(2) = x$
 $100^\circ = x$

9)

$180 - 72 = 108$
 $x = \frac{1}{2}(108) = 54^\circ$

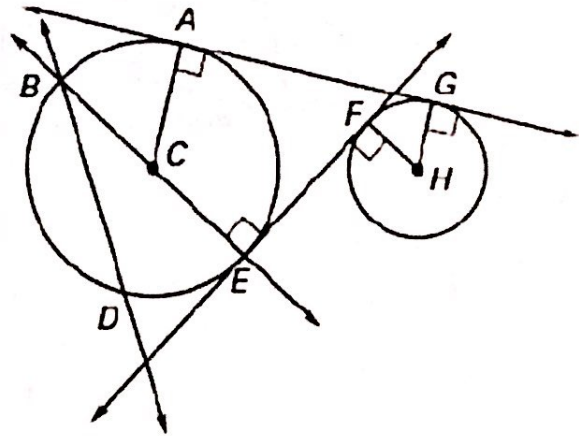
10)

$3(2) = 78$
 $180 = x + 78$
 $-78 \quad -78$
 $x = 102^\circ$

Part 3:

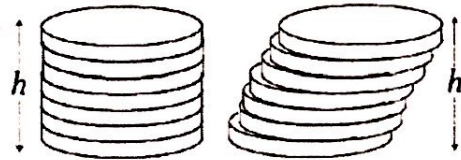
Name the term that best describes the notation.

1. F point of tangency
2. \overleftrightarrow{FE} tangent line
3. \overline{HC} radius
4. \overline{DB} ~~secant~~ chord
5. C center
6. \overline{BE} diameter
7. \overleftrightarrow{DB} secant
8. \overleftrightarrow{AG} tangent line



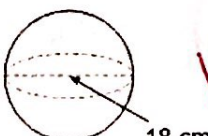
Looking at the stack of quarters below, what do we know about their volumes? Explain why.

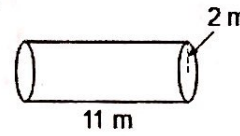
The volume's are the same b/c of Cavalieri's principle.

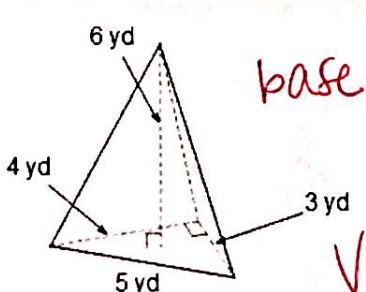


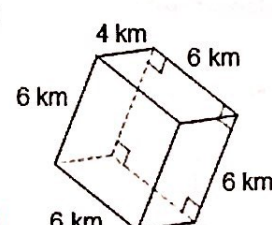
Part 4:

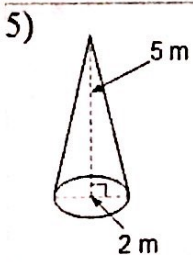
Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

1)  $V = \frac{4}{3} \pi (9)^3 = \boxed{3053.6}$

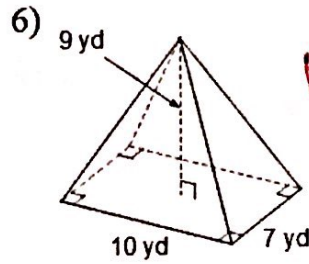
2)  $V = \pi (2)^2 (11) = \boxed{138.2}$

3)  $\text{base: } \frac{1}{2} (3)(4) = 6$
 $V = \frac{6(6)}{3} = \frac{36}{3} = \boxed{12}$

4)  $V = 6(6)(4) = \boxed{144}$

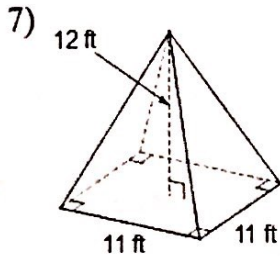


$$V = \frac{\pi (1)^2 5}{3} = \boxed{5.2}$$



base: $(7)(10) = 70$

$$\frac{(70)(9)}{3} = \boxed{210}$$



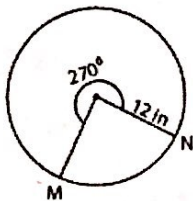
base: $(11)(11) = 121$

$$\frac{(121)(12)}{3} = \boxed{484}$$

Part 5:

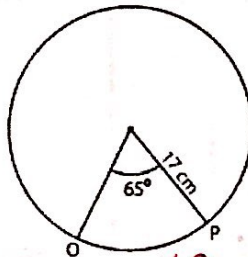
Find the length of the arc and area of the shaded region. Round the answer to two decimal places. (use $\pi = 3.14$)

1)



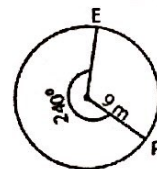
Length of the arc MN = 56.5
Area of a sector = 339.3

2)



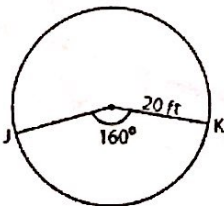
Length of the arc OP = 19.3
Area of a sector = 163.9

3)



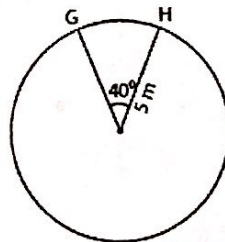
Length of the arc EF = 37.7
Area of a sector = 169.6

4)



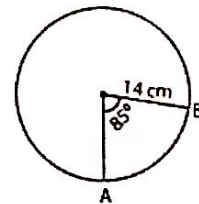
Length of the arc JK = 55.9
Area of a sector = 558.5

5)



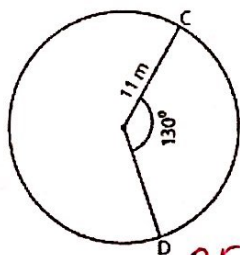
Length of the arc GH = 3.5
Area of a sector = 8.7

6)



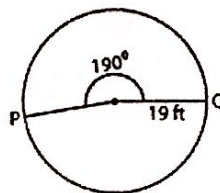
Length of the arc AB = 20.8
Area of a sector = 145.4

7)



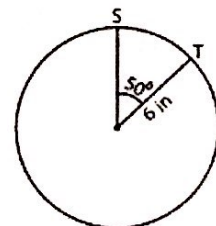
Length of the arc CD = 25.0
Area of a sector = 137.3

8)



Length of the arc PQ = 63.0
Area of a sector = 598.6

9)



Length of the arc ST = 5.2
Area of a sector = 15.7

Arc length = $\frac{2\pi R \cdot \text{cents}}{360}$

Area of sector = $\frac{\pi R^2 \cdot \text{cents}}{360}$

Part 6:

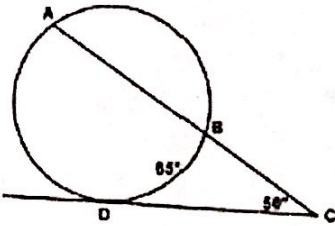
10.

$$50 = \frac{1}{2}(x - 65)$$

$$50 = \frac{1}{2}x - 32.5$$

$$82.5 = \frac{1}{2}x$$

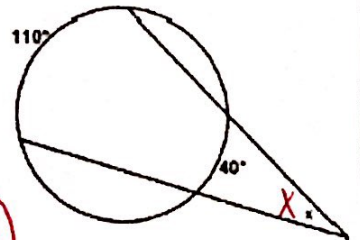
$$\boxed{x = 165^\circ}$$



11. Find the value of x

$$x = \frac{1}{2}(110 - 40)$$

$$x = \frac{1}{2}(70) = \boxed{35^\circ}$$



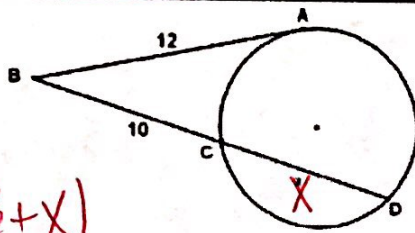
12. Solve for x

$$12^2 = 10(10 + x)$$

$$144 = 100 + 10x$$

$$44 = 10x$$

$$\boxed{x = 4.4}$$

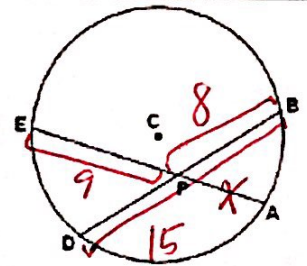


13. DB = 15, PB = 8, EP = 9.
Find PA.

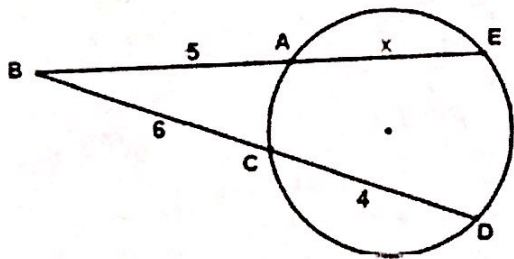
$$8(7) = 9(x)$$

$$56 = 9x$$

$$\boxed{x = 6.2}$$



14.



$$5(5 + x) = 6(6 + 4)$$

$$25 + 5x = 6(10)$$

$$25 + 5x = 60$$

$$5x = 35$$

$$\boxed{x = 7}$$