

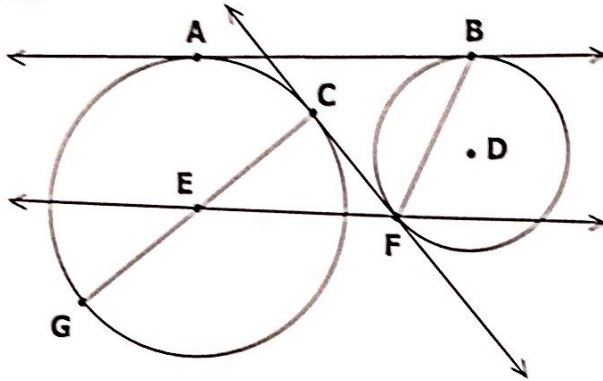
# GSE Accelerated Geometry EXAM REVIEW

Name Key  
Period \_\_\_\_\_ Date \_\_\_\_\_

## Part 2

(Note: Assume things that appear to be tangent really are tangent.)

1. **Vocab.** Match each object to the word/phrase that best describes it. You will NOT use all the words.



- common external tangent
- common internal tangent
- point of tangency
- chord (not a diameter)
- Diameter
- Congruent circles
- Similar circles
- minor arc
- secant
- center
- major arc
- semicircle
- radius

You will NOT use all the words.

- a.  $\overline{CF}$  Common internal tangent
- b.  $\overline{GAC}$  semicircle
- c.  $\overline{EF}$  chord

- d.  $\overline{ED}$  radius
- e.  $\overline{AB}$  common external tangent
- f.  $\overline{AGC}$  major arc

2. **Segments, Part A.** Find  $x$ . Give non-integer answers as reduced fractions. Use Pythagorean Theorem on a and b.

a.

$$x^2 + 13^2 = (x+7)^2$$

$$x^2 + 169 = x^2 + 14x + 49$$

$$120 = 14x$$

$$\frac{120}{14} = x$$

$x = \frac{60}{7}$

b.

$$3^2 + x^2 = 5^2$$

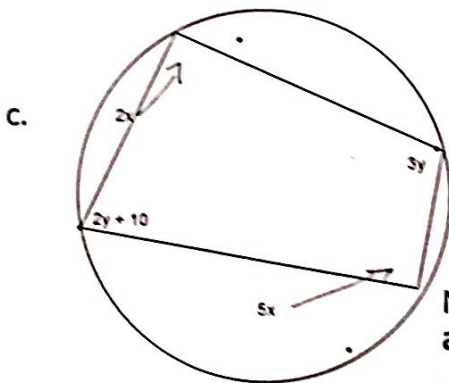
$$9 + x^2 = 25$$

$$x^2 = 16$$

$$x = 4$$

$x = 4$

Perimeter of the big  $\Delta = 30$



$$x = \frac{180}{7} \quad y = 34$$

Note: Opposite angles of a quadrilateral inscribed in a circle are supplementary.

$$2y + 10 + 3y = 180$$

$$5y = 170$$

$$y = \frac{170}{5} = 34$$

$$2x + 5x = 180$$

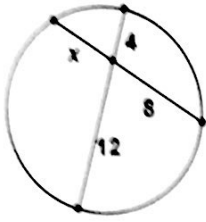
$$7x = 180$$

$$x = \frac{180}{7}$$

**3. Segments, Part B.** Solve for the variable. Give non-integer answers as reduced fractions. Use theorems such as **wholxoutside = wholxoutside** OR **wholxoutside = tangent<sup>2</sup>**

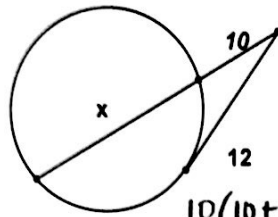
a.

$$\begin{aligned} 5x &= (12)(4) \\ 5x &= 48 \\ x &= 6 \end{aligned}$$



$x = \underline{6}$

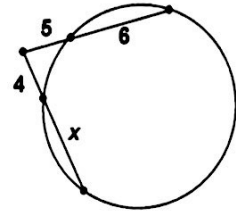
b.



$$\begin{aligned} 10(10+x) &= 12^2 \\ 100 + 10x &= 144 \\ 10x &= 44 \\ x &= \frac{44}{10} \\ x &= \frac{22}{5} \end{aligned}$$

$r = \underline{10}$

c.

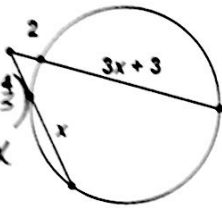


(x is the length inside the circle)

$x = \underline{\frac{39}{4}}$

$$\begin{aligned} 5(5+6) &= 4(4+x) \\ 55 &= 16 + 4x \\ 39 &= 4x \\ \frac{39}{4} &= x \end{aligned}$$

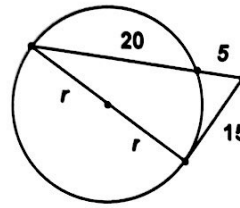
d.



$$\begin{aligned} 4(4+x) &= 2(2+3x+3) \\ 16 + 4x &= 10 + 6x \\ 6 &= 2x \\ 3 &= x \end{aligned}$$

$x = \underline{3}$

e.

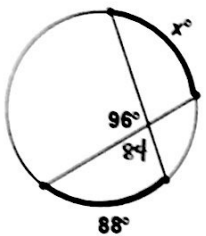


(r is the radius of the circle)

$$\begin{aligned} (2r)^2 + 15^2 &= 25^2 \\ 4r^2 + 225 &= 625 \\ 4r^2 &= 400 \\ r^2 &= 100 \\ r &= 10 \end{aligned}$$

**4. Angle and Arc Measures.** Find the value of x. Assume P is the center.

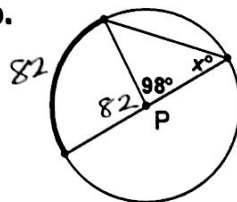
a.



$$\begin{aligned} \frac{x+88}{2} &= 84 \\ x+8 &= 168 \\ x &= 160 \end{aligned}$$

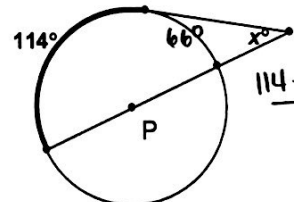
$x = \underline{160^\circ}$

b.



$x = \underline{41^\circ}$

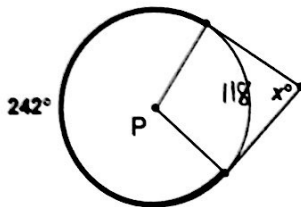
c.



$$\begin{aligned} \frac{114-66}{2} &= x \\ x &= 24 \end{aligned}$$

$x = \underline{24}$

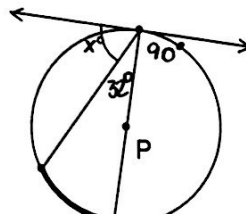
d.



$$\begin{aligned} \frac{242-118}{2} &= x \\ x &= 62 \end{aligned}$$

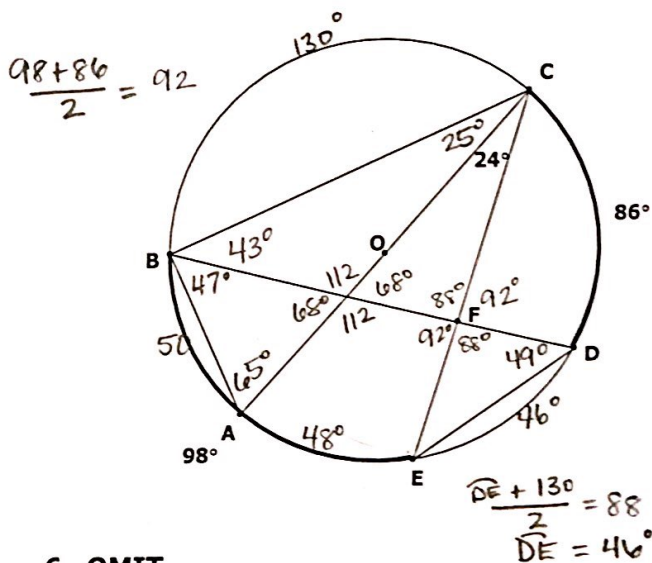
$x = \underline{62^\circ}$

e.



$x = \underline{58^\circ}$

5. Circle Puzzles.



Given:  $m\widehat{CD} = 86^\circ$ ;  $m\widehat{BE} = 98^\circ$ ;  
 $m\angle ACE = 24^\circ$ ;  $\overline{AC}$  is a diameter of  $\odot O$

- a.  $m\widehat{AB}$  50°
- b.  $m\angle EFB$  92°
- c.  $m\angle BCA$  25°
- d.  $m\angle BAC$  65°
- e.  $m\widehat{AD}$  94°
- f.  $m\angle BDE$  49°

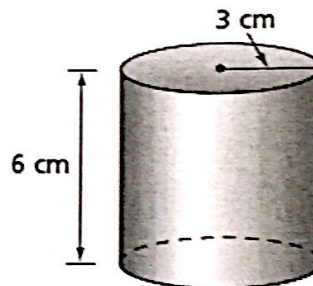
6. OMIT

7. Volume: Give exact answers only.

(a) Find the volume of the cylinder.

$V = \pi r^2 H$   
 $\pi(3)^2(6)$

$54\pi \text{ cm}^3$



(b) Spaceship Earth at Epcot Center in Florida is a 180-foot Geosphere. Find the volume by assuming it is a sphere with a diameter of 180 ft.

$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(90)^3$

$972,000\pi \text{ ft}^3$

(c) A Native American Tepee (conical tent) has a height of 12 feet and a base with a radius of 6 feet. What is the volume of the Tepee?

$V = \frac{1}{3}\pi r^2 H = \frac{1}{3}\pi(6)^2(12)$

$144\pi \text{ ft}^3$

(d) A candle mold is in the shape of a square pyramid, whose length of the sides of the base is 3 inches and the height is 5 inches. How much wax is needed for each candle?

$V = \frac{1}{3}(L)(W)(H) = \frac{1}{3}(3)(3)(5) = 15 \text{ in}^3$