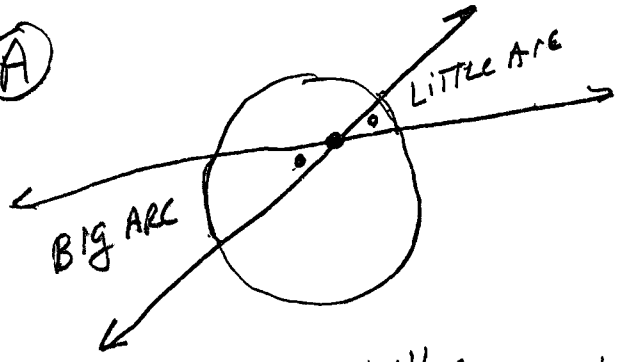
Geometry Tues. 1-29-13 Class Notes

Arcs and Angles ∠

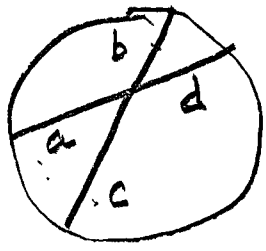
Line Segments/Circles

(A)



$$\frac{\text{Big Arc} + \text{Little Arc}}{2} = \text{Angle}$$

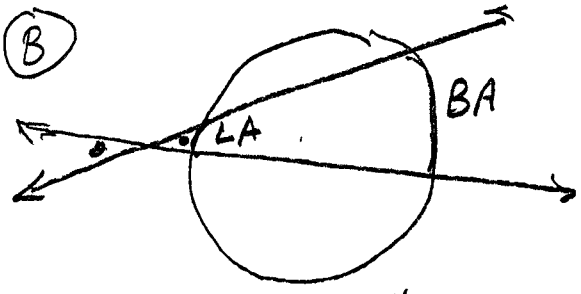
(E)



$$ad = bc$$

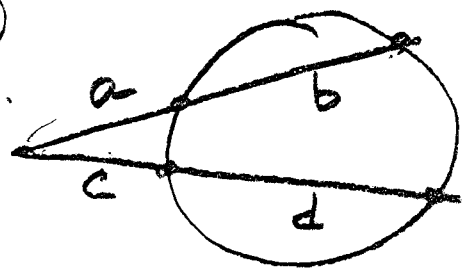
Central ∠, Inscribed ∠

(B)



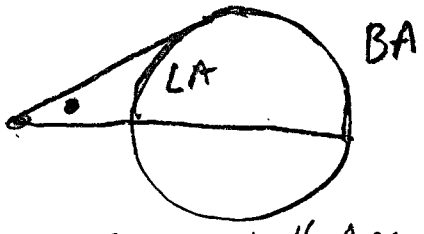
$$\frac{\text{Big Arc} - \text{Little Arc}}{2} = \text{Angle}$$

(F)



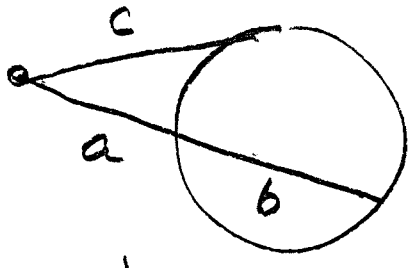
$$(a+b)a = (c+d)c$$

(C)



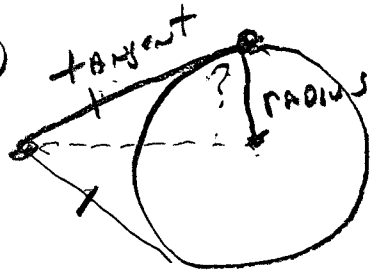
$$\frac{\text{Big Arc} - \text{Little Arc}}{2} = \text{Angle}$$

(G)



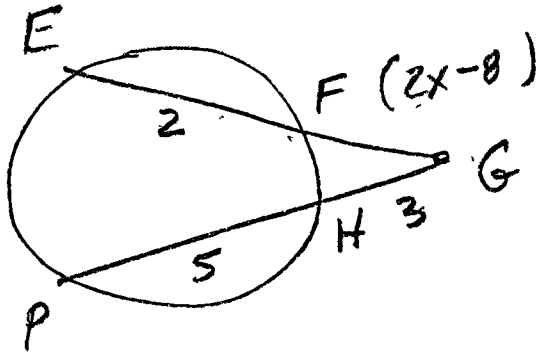
$$(a+b)a = c^2$$

(D)



$? = 90^\circ$
iff tangent

7. FG?



$$[2+(2x-8)][2x-8] = 8\cdot 3$$

$$(2x-6)(2x-8) = 24$$

$$4x^2 - 16x - 12x + 48 = 24$$
$$-24 \quad -24$$

$$4x^2 - 28x + 24 = 0$$

$$4[x^2 - 7x + 6] = 0$$

$a = 1$ $\quad b^2 - 4ac$

$b = -7$ $\quad (-7)^2 - 4(1)(6)$

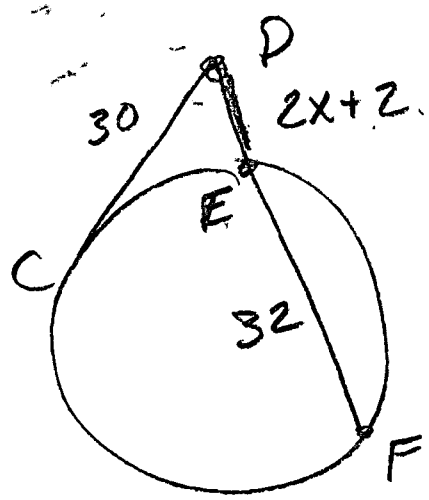
$c = 6$ $\quad 49 - 24 = 25 = d$

$$x = \frac{-b \pm \sqrt{d}}{2a} = \frac{7 \pm 5}{2} \Rightarrow \{6, \cancel{1}\}$$

$FG = 2x - 8$

$FG = 2(6) - 8 = 4$

(7.) $DE = ?$



$$[(2x+2)+32][2x+2] = 30^2$$

$$= 900$$

$$[2x+34][2x+2]$$

$$4x^2 + 4x + 68x + 68 = 900$$

$$4x^2 + 72x + 68 = 900$$
$$-900 \quad -900$$

$$4x^2 + 72x - 832 = 0$$

$$4[x^2 + 18x - 208] = 0$$

$$a = 1 \qquad b^2 - 4ac$$

$$b = 18 \qquad (18)^2 - 4(1)(-208)$$

$$c = -208 \qquad 324 + 832 = 1156 = d$$

$$x = \frac{-18 \pm 34}{2} = \left\{\frac{16}{2}, \frac{-52}{2}\right\}$$

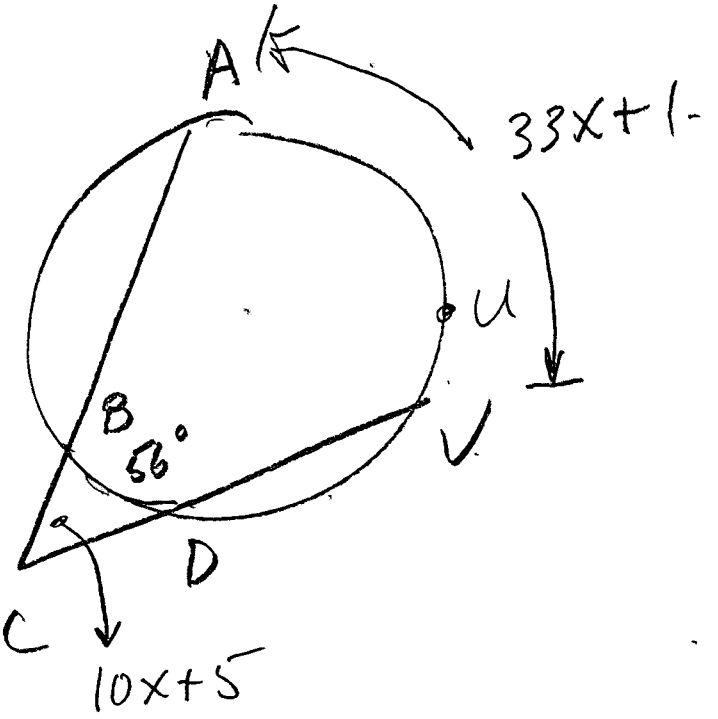
$$= \{8, -26\}$$

$$DE = 2(8) + 2$$
$$= 18$$

34
34
136
102
1156

(10) $m\overset{\frown}{VUA} = 33x+1 = ?$

ID3



$$\frac{(33x+1)-56}{2} = (10x+5)$$

$$2 \cdot \frac{33x-55}{2} = (10x+5)\cdot 2$$

$$33x-55 = 20x+10$$

$$-20x \quad\quad -20x$$

$$13x-55 = 10$$

$$\frac{13x}{13} = \frac{65}{13}$$

$$x = 5$$

$\therefore m\overset{\frown}{VUA}$

$33x+1$

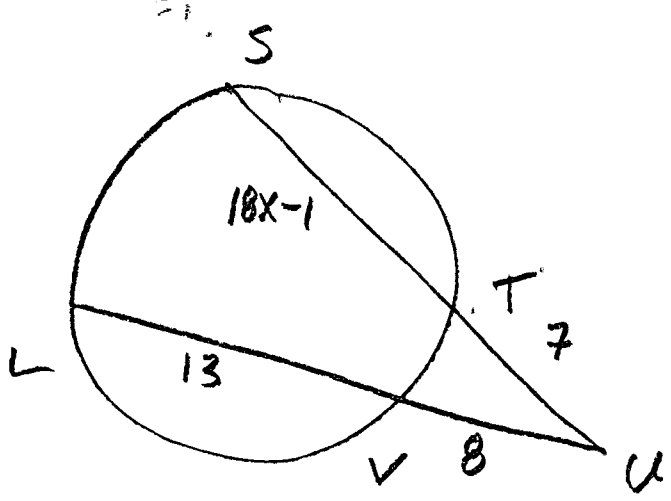
$33(5)+1$

$166°$

Quiz Review

(4) $ST = ?$

ID 2



$$[(18x-1)+7]\,7 = 21 \cdot 8$$

$$[18x+6]\,7 = 168$$

$$126x + 42 = 168$$

$$-42 \qquad -42$$

$$\frac{126x}{126} = \frac{126}{126}$$

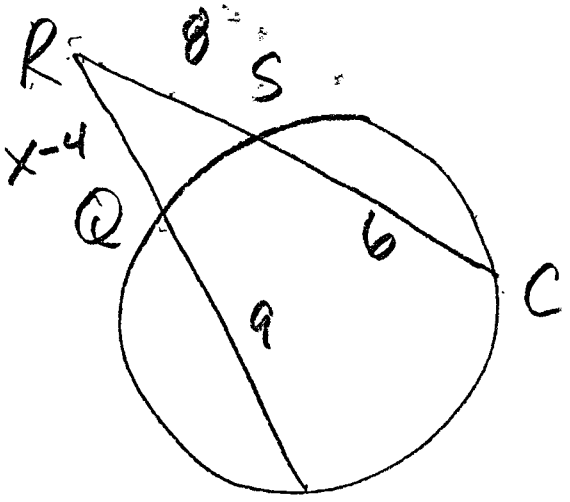
$$x = 1$$

$ST = 18x - 1$

$= 18(1) - 1$

$ST = 17$

(7.)



$QR = ?$

$14.8 = \frac{1}{2}[(x-4)+9](x-4)$

$11^{3}2 = [x+5][x-4]$

$112 = x^2 - 4x + 5x - 20$

$112 = x^2 + x - 20$

$-112 \qquad -112$

$0 = x^2 + x - 132$

$a = 1$

$b = 1$

$c = -132$

$b^2 - 4ac$

$(1)^2 - 4(1)(-132)$

$1 + 528 = 529 = d$

$23 \times 23 = 529$

$x = \frac{-1 \pm 23}{2} = \frac{22}{2}, \frac{-24}{2}$

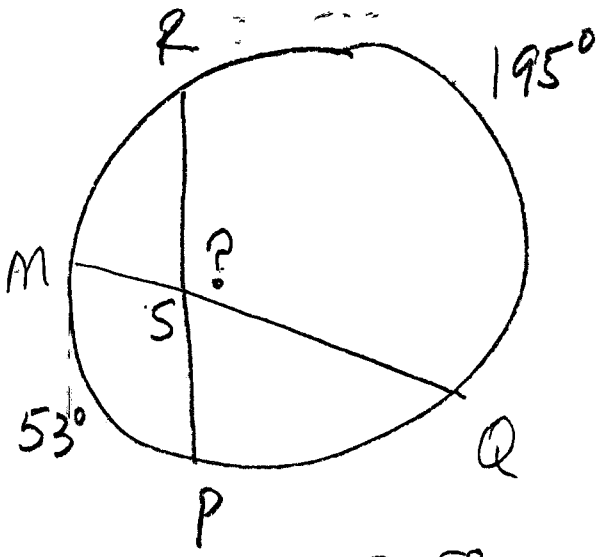
$= 11, -12$

$QR = x - 4$

$= 11 - 4 = 7$

WS Prac.

(5)



$m\angle RSQ = X$

$$\frac{195+53}{2} = mXL$$

$$\frac{248}{2} = X \qquad \boxed{X = 124^\circ}$$

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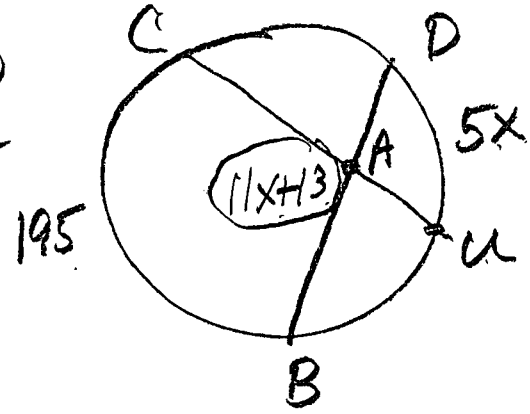
(9)

ID 2



$m\angle BAC$

$11x + 13$

$11(10) + 13$

$110 + 13$

$\boxed{123^\circ}$

$$\frac{195+(5x+1)}{2} = (11x+13)$$

$$\cancel{2}\cdot\frac{196+5x}{\cancel{2}} = (11x+13)\cdot 2$$

$$196+5x = 22x+26$$

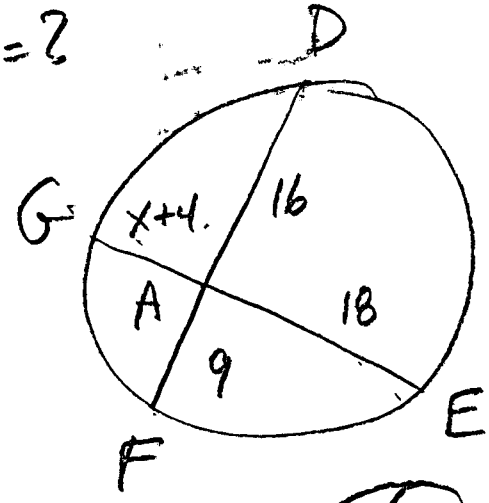
$$\begin{array}{rl} -5x & -5x \\ 196 & = 17x+26 \\ -26 & -26 \\ \hline \frac{170}{17} & = \frac{17x}{17} \end{array}$$

$$10 = x$$

(2)

ID2

EG = ?



$9 \cdot 16 = (x+4)\,18$

$144 = 18x + 72$

$-72 \qquad -72$

$\frac{72}{18} = \frac{18x}{18}$

$4 = x$

$EG = (x+4) + 18$

$= (4+4) + 18$

$EG = 26$