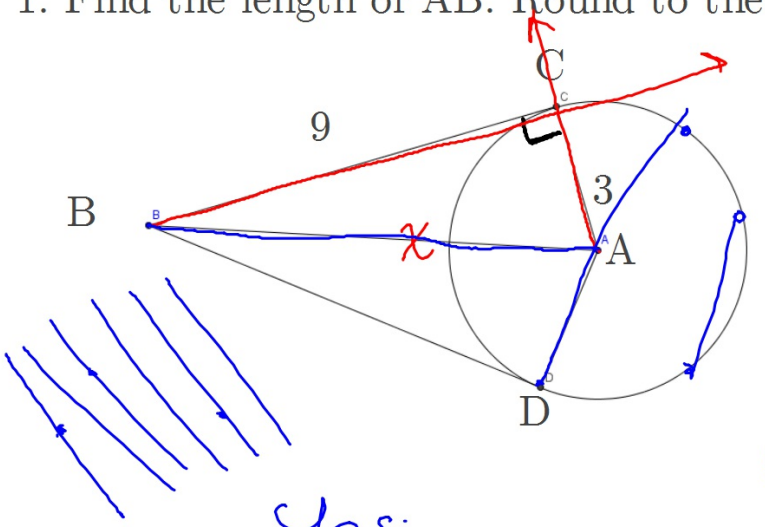
Warm Up Problem: Please complete on half-sheets on desk:

(Also have Homework out on desk please)

1. Find the length of AB. Round to the thousandths place if needed.



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

$9^2+3^2=x^2$

$81+9=x^2$

$\sqrt{90}=\sqrt{x^2}$

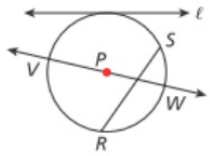
$x\approx 9.486$

2. Is a circle's diameter a chord? Can a tangent line be a chord? Justify your answers.

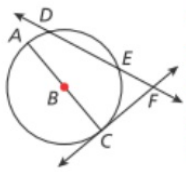
Yes;

No.

Homework Solutions p. 752

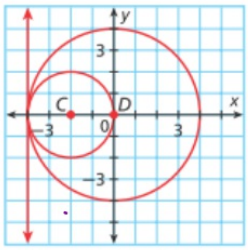
11. 

chords: $\overline{RS}$, $\overline{VW}$;
secant: $\overleftrightarrow{VW}$;
tangent: ℓ;
diam.: $\overline{VW}$;
radii: $\overline{PV}$, $\overline{PW}$

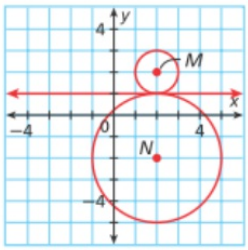
12. 

chords: $\overline{DE}$, $\overline{AC}$;
secant: $\overleftrightarrow{DE}$;
tangent: $\overleftrightarrow{CF}$;
diam.: $\overline{AC}$;
radii: $\overline{BA}$, $\overline{BC}$

Multi-Step Find the length of each radius. Identify the point of tangency and write the equation of the tangent line at this point.

13. 

radius of $\odot C$: 2; radius of $\odot D$: 4; pt. of tangency: $(-4, 0)$; eqn. of tangent line: $x = -4$

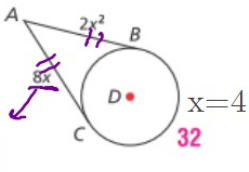
14. 

radius of $\odot M$: 1; radius of $\odot N$: 3; pt. of tangency: $(2, 1)$; eqn. of tangent line: $y = 1$

15. Astronomy Olympus Mons's peak rises 25 km above the surface of the planet Mars. The diameter of Mars is approximately 6794 km. What is the distance from the peak of Olympus Mons to the horizon to the nearest kilometer? 413 km

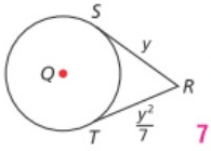
The segments in each figure are tangent to the circle. Find each length.

16. *AB*



x=4
32

17. *RT*



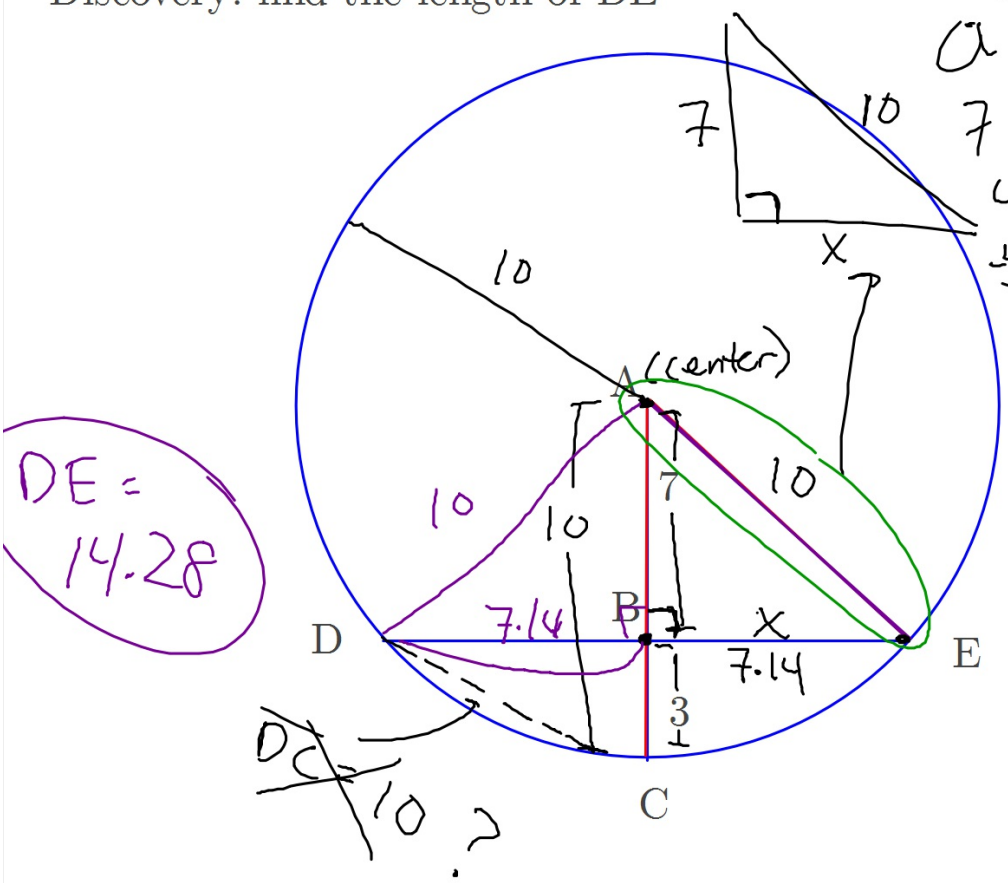
y=7
7

18. Sometimes
19. Never
20. Never
21. Always
22. Sometimes
23. AC
24. PA, PC, PB, PD
25. AC
26. 138
27. 45

$2x^2 = 8x$
$-8x \quad -8x$
$2x^2 - 8x = 0$
$2x(x - 4) = 0$
$2x = 0$ $\quad x - 4 = 0$
$x = 0$ $\quad +4 \quad +4$
$x = 4$

Arcs and Chords.

Discovery: find the length of DE



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

$7^2 + x^2 = 10^2$

$49 + x^2 = 100$

$-49 \quad -49$

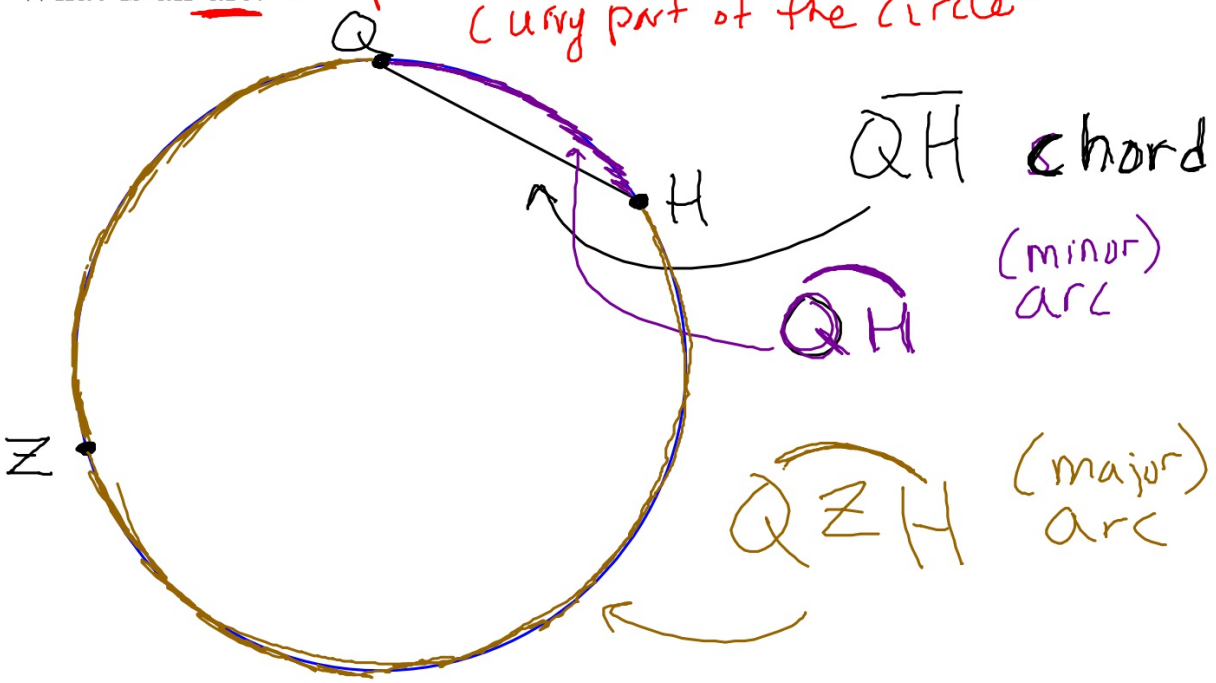
$x^2 = \sqrt{51}$

$x = \sqrt{51}$

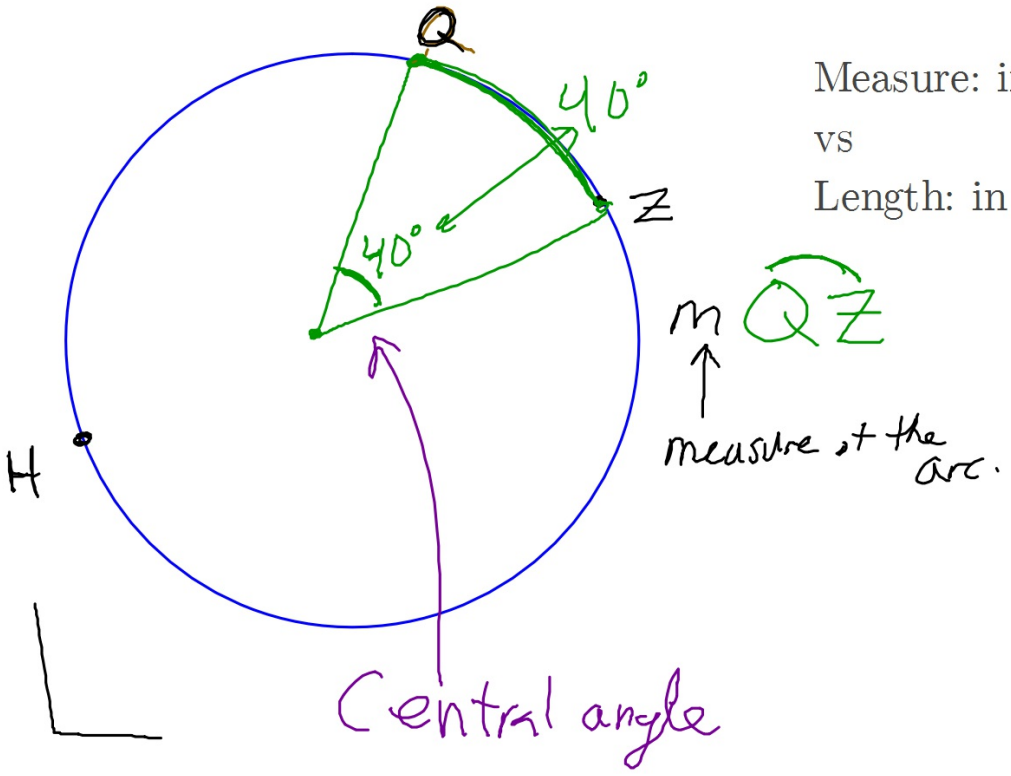
$x \approx 7.14$

DE = 14.28

What is an arc? = a part of the curvy part of the circle.



How to describe an arc:



Measure: in degrees

vs

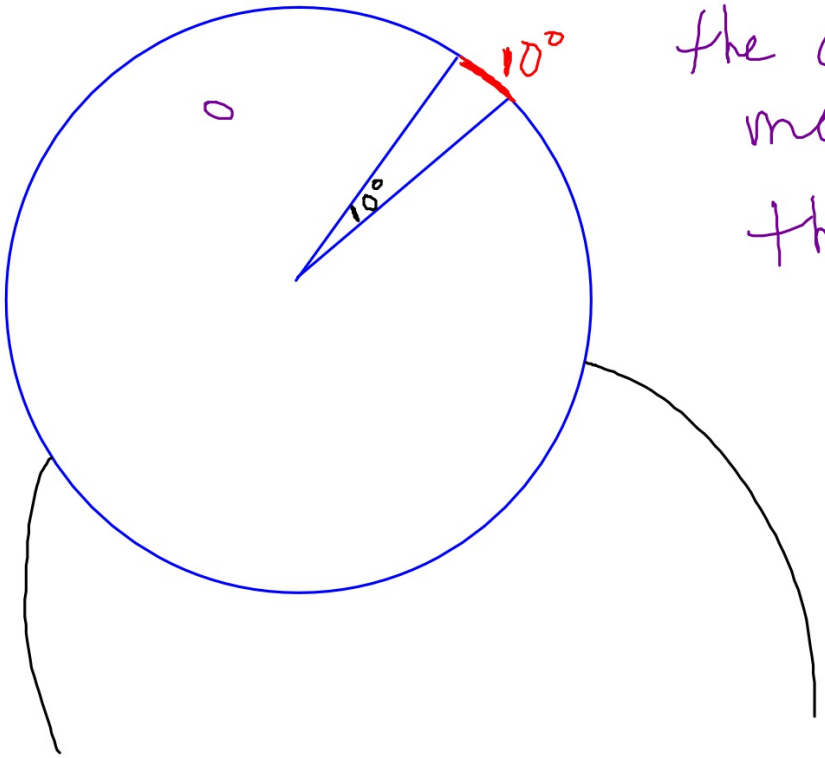
Length: in distance units

$m\overset{\frown}{QZ}$

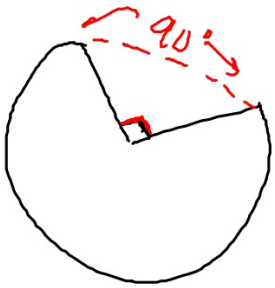
↑

measure of the arc.

Central Angle:

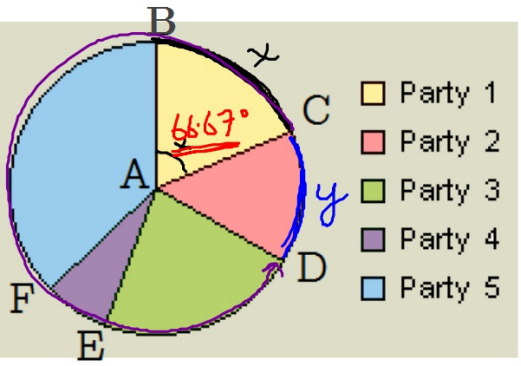


the central angle measure = the arc measure



Parliament Seats	
Party 1	100
Party 2	80
Party 3	120
Party 4	40
Party 5	200

total 540



$\overset{\frown}{mBC} = 66.67°$

$\frac{100 \text{ ppl}}{540 \text{ total}} = \frac{x}{360° \text{ total}}$

$\frac{540x}{540} = \frac{36{,}000}{540}$

$x = 66.67°$

$\frac{80}{540} = \frac{y}{360°}$

$\frac{28800}{540} = \frac{540y}{540}$

$53.33° = y$

$\overset{\frown}{mCD}$

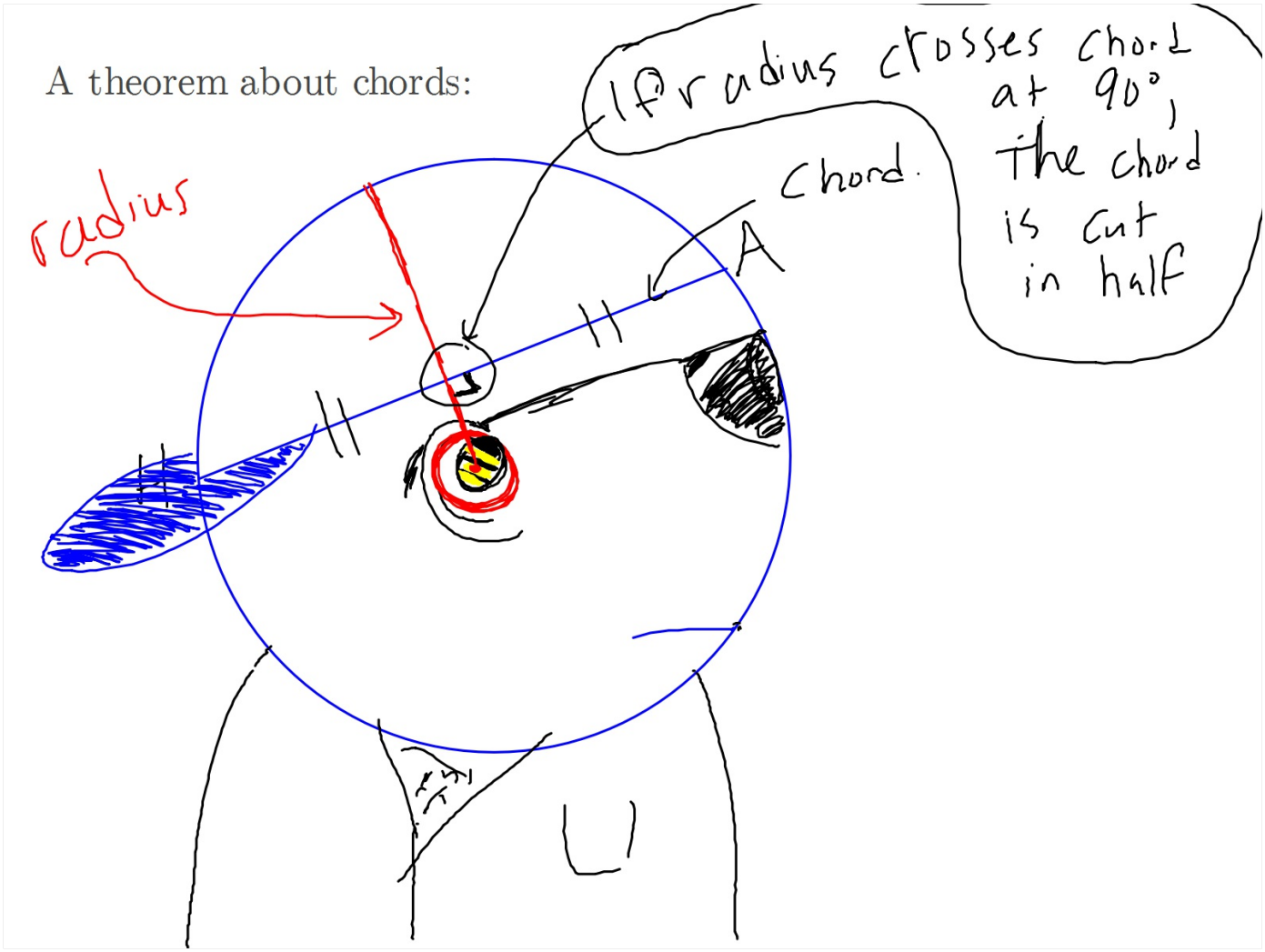
$53.33°$

[redacted]

$\overset{\frown}{mCFD}$

$306.67°$

A theorem about chords:



p. 760

#19-35,

#44-49

Theorem: The radius that crosses a chord at 90° bisects that chord.