I, April 14

250. The locus is the line found by extending the radius of the circle connecting the center to the given point.

251. External tangency: locus is the circle with the same center as the given circle and radius $= r_1 + r_2$ when $r_1 =$ radius of circle, $r_2 =$ given radius

258. $\frac{1}{2} \cdot \frac{360^\circ}{12}$ or $\frac{1}{2} \cdot \frac{2\pi}{12}$

265. locus is circle with diameter AB

259. $\frac{1}{2} \cdot \frac{5}{12} 2\pi$ and $\frac{1}{2} \cdot \frac{7}{12} \cdot 2\pi$

266. locus is circle with diameter OP when O = center of circle, P = given pt.

268. ~~Proof uses~~ vertical angles and Theorem 125.

269. 

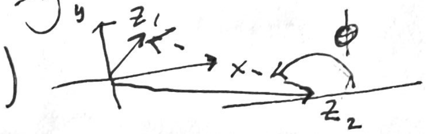
Angles 1,2,3 are equal by vertical angles and theorem 125
Angle A = Angle 3 by ½ angle theorem so dotted chords are parallel by alternate angle test.

II. April 21

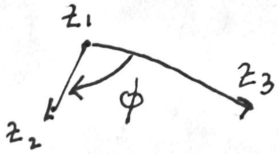
Courant (p97): 1) $\cos 4\phi = \cos^4\phi - 6\cos^2\phi \sin^2\phi + \sin^4\phi$

2) $z = \cos\phi + i\sin\phi \Rightarrow 1/z = \cos(-\phi) + i\sin(-\phi) = \cos\phi - i\sin\phi$

3) In order to compute the modulus = absolute value of the fraction $\frac{a+bi}{a-bi}$, divide the modulus of numerator $= \sqrt{a^2+b^2}$ by modulus of denominator $= \sqrt{a^2+b^2}$

4) 

by vector subtraction

5) 

6) To find quotient of two complex #s, subtract angles

7) Prove using theorem 126 Kiselev

8) Proof uses Ex 7 and ½ angle theorem.

#278) Use problem 130 p 103

#320) Given 

draw 3rd vertex by connecting center AB to O