102. Sketch the graph and determine the asymptotes if any of the following curve: $r = \frac{10}{2+3\cos 0}$
103. Find the polar form of $\frac{1+2i}{2+i}$ without performing the division.
104. Compute $(\sqrt{3}+i)^6$
105. Express the following in a simpler form:
$1+\cos\theta+.....+\cos n\theta$,$\sin\theta+.....+\sin n\theta$.

ANSWERS TO EVEN NUMBERED EXERCISES

84. a) $44x^2+36xy+71y^2-268x-426y+719=0$
b) $4x^2-20xy-11y^2+12x+6y+45=0$
c) $9x^2-12xy+4y^2-36x+50y+49=0$

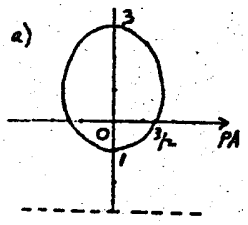
86. a) $a=15/4, b=3, c=9/4$ b) $a=15/4, b=5, c=75/12$

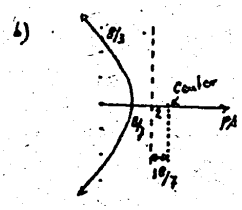
88. $3x^2+3y^2+4x+2y-15=0$
90. $x^2-y^2=0$
92. $5xy+8x=0$

94. a) $r(3\cos\theta-2\sin\theta)-9=0$ b) $r^2(b^2\cos^2\theta+a^2\sin^2\theta)=a^2b^2$

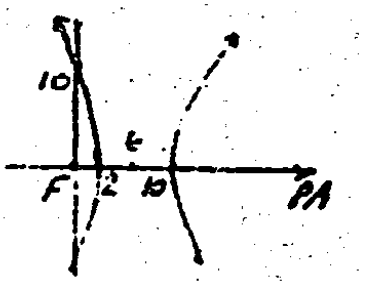
96. $2xy-3x-2y=0$; $r=0, r\sin 2\theta=3\cos\theta+2\sin\theta$.

100. a) an ellipse $e=1/2$ $p=3$,$a=2$,$b=\sqrt{3}$
b) a hyperbola $e=4/3$,$p=2$,$a=\frac{24}{7}$,$b=\frac{8\sqrt{7}}{7}$





102.



$r\cos[\theta-\arccos(-2/3)]-2\sqrt{5}=0$

104. -64