

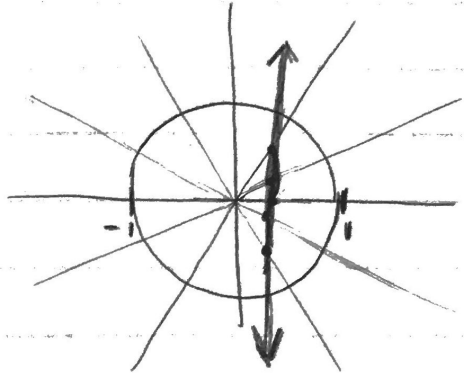
pg. 560

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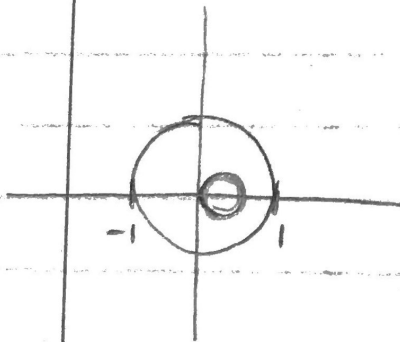
# 10-19, 28, 29

10.  $r = \frac{1}{4} \cdot \frac{1}{\cos \theta}$   
 $= \frac{1}{4 \cos \theta}$

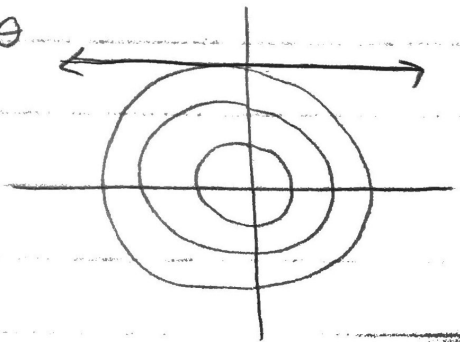
$\theta$	$r$	$\theta$	$r$
0	0.25	$\frac{7\pi}{6}$	-0.29
$\frac{\pi}{6}$	0.29	$\frac{4\pi}{3}$	-0.5
$\frac{\pi}{3}$	0.5	$\frac{3\pi}{2}$	und.
$\frac{\pi}{2}$	und.	$\frac{10\pi}{3}$	0.5
$\frac{2\pi}{3}$	-0.5	$\frac{11\pi}{6}$	0.29
$\frac{5\pi}{6}$	-0.29	$2\pi$	0.25
$\pi$	-0.25		



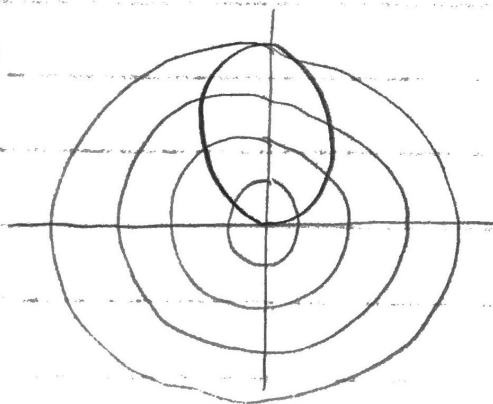
11.  $r = \frac{1}{3} \cos \theta$



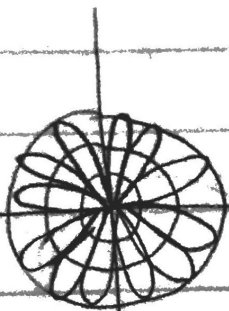
12.  $r = 3 \csc \theta$   
 $= \frac{3}{\sin \theta}$



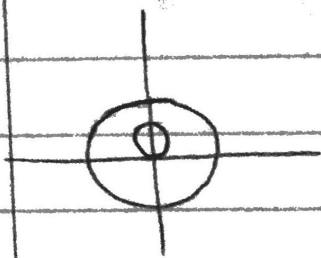
13.  $r = 4 \sin \theta$



14.  $r = 3 \sin 6\theta$  12 petals, length 3, not on axes.



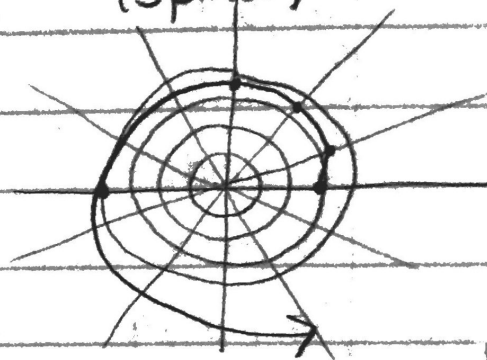
15.  $r = \frac{1}{2} \sin \theta$  (circle)



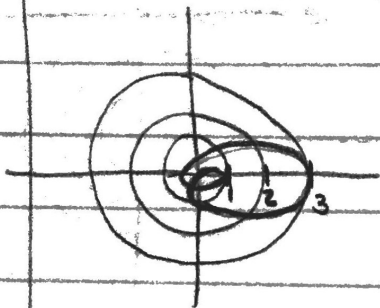
16.  $r = \frac{1}{3} \theta + 3$

$\theta$	$r$
0	3
$\pi/6$	3.21
$\pi/3$	3.3
$\pi/2$	3.5
$2\pi/3$	3.7
$5\pi/6$	3.9
$\pi$	4

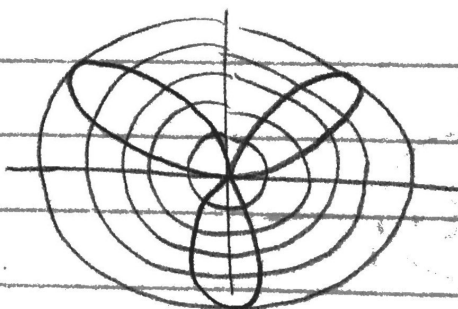
(spiral)



17.  $r = 1 + 2 \cos \theta$



18.  $r = 5 \sin 3\theta$



19.  $y^2 = \frac{1}{2}x$

$$r^2 \sin^2 \theta = \frac{1}{2} r \cos \theta$$

$$r \sin^2 \theta = \frac{1}{2} \cos \theta$$

$$r = \frac{\cos \theta}{2 \sin^2 \theta}$$

$$r\left(\frac{\pi}{4}\right) = \frac{\cos \frac{\pi}{4}}{2 \sin^2 \frac{\pi}{4}} = \frac{\frac{\sqrt{2}}{2}}{2\left(\frac{\sqrt{2}}{2}\right)^2} = \frac{\frac{\sqrt{2}}{2}}{2\left(\frac{2}{4}\right)} = \frac{\frac{\sqrt{2}}{2}}{1} = \frac{\sqrt{2}}{2}$$

$$r\left(\frac{\pi}{4}\right) \approx 0.707 \text{ (eliminate A \& C)}$$

$$r\left(\frac{\pi}{2}\right) \approx 7.21 \text{ (B)}$$

$$28. r = 3\sin\theta$$

$$r^2 = 3r\sin\theta$$

$$x^2 + y^2 = 3y$$

$$x^2 + y^2 - 3y = 0$$

$$x^2 + (y - 1.5)^2 = 2.25$$

$$x^2 + \left(y - \frac{3}{2}\right)^2 = \frac{9}{4}$$

$$29. r = 4\sec\theta$$

$$x = r\cos\theta$$

$$\frac{x}{\cos\theta} = r$$

$$\frac{x}{\cos\theta} = \frac{4}{\cos\theta}$$

$$x = 4$$