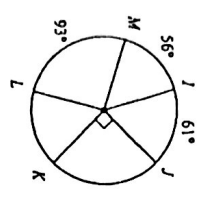
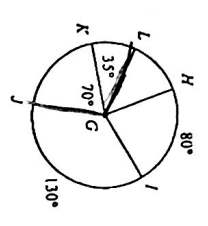


19)  $m\angle MJL = 117^\circ$

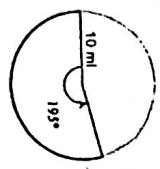


20)  $m\angle IGL = 108^\circ$



Find the length of each arc.

21)

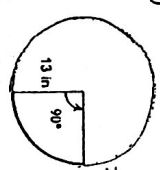


$$\frac{195}{360} = \frac{x}{2\pi(10)}$$

$$x = \frac{195}{360} \cdot 2\pi(10)$$

$\frac{45\pi}{6}$

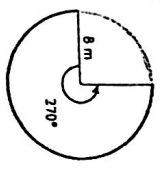
22)



$$\frac{90}{360} \cdot 2\pi(13) = \frac{2340\pi}{360}$$

$\frac{13\pi}{2}$

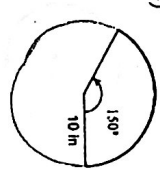
23)



$$\frac{270}{360} \cdot 2\pi(8)$$

$12\pi$

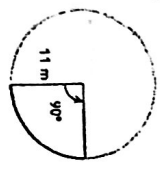
24)



$$\frac{150}{360} \cdot 2\pi(10)$$

$\frac{25\pi}{3}$

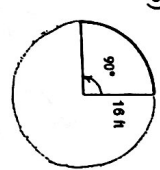
25)



$$\frac{90}{360} \cdot 2\pi(11)$$

$\frac{11\pi}{2}$

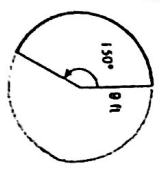
26)



$$\frac{90}{360} \cdot 2\pi(18)$$

$8\pi$

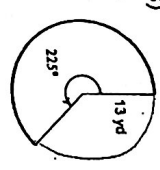
27)



$$\frac{150}{360} \cdot 2\pi(8)$$

$\frac{15\pi}{2}$

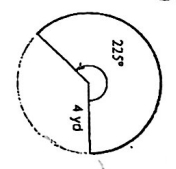
28)



$$\frac{225}{360} \cdot 2\pi(13)$$

$\frac{45\pi}{4}$

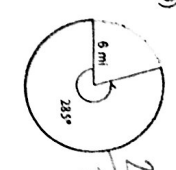
29)



$$\frac{225}{360} \cdot 2\pi(4)$$

$5\pi$

30)

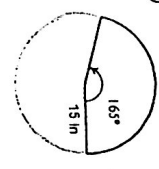


$$\frac{285}{360} \cdot 2\pi(6)$$

$\frac{19\pi}{2}$

Find the area of each sector.

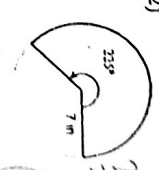
31)



$$\frac{165}{360} = \frac{x}{\pi(15)^2}$$

$$x = \frac{165}{360} \cdot \pi(15)^2$$

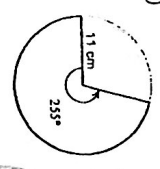
32)



$$\frac{235}{360} \cdot \pi(7)^2$$

$\frac{245\pi}{8}$

33)



$$\frac{255}{360} \cdot \pi(11)^2$$

$\frac{405\pi}{8}$

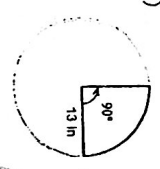
34)



$$\frac{135}{360} \cdot \pi(11)^2$$

$\frac{363\pi}{8}$

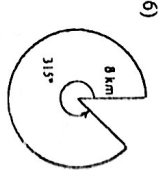
35)



$$\frac{90}{360} \cdot \pi(13)^2$$

$\frac{169\pi}{4}$

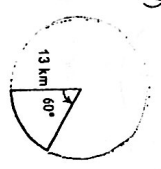
36)



$$\frac{315}{360} \cdot \pi(8)^2$$

$56\pi$

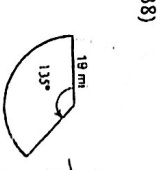
37)



$$\frac{60}{360} \cdot \pi(13)^2$$

$\frac{169\pi}{6}$

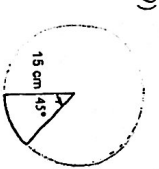
38)



$$\frac{135}{360} \cdot \pi(18)^2$$

$\frac{1083\pi}{8}$

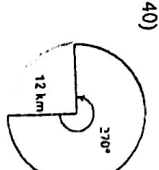
39)



$$\frac{45}{360} \cdot \pi(15)^2$$

$\frac{225\pi}{8}$

40)



$$\frac{270}{360} \cdot \pi(12)^2$$

$108\pi$