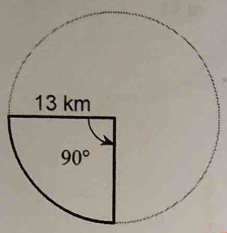
Honors Math 3

key

Arc Length and Area of Sectors

Find the area of each sector. $A = \frac{\theta}{360}\pi r^2$

1)

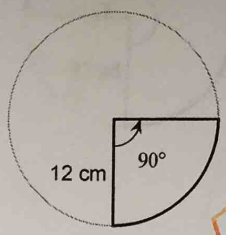


$A = \frac{90}{360}\pi(13)^2$

$A = \frac{1}{4} \cdot \pi \cdot 169$

$A = \frac{169\pi}{4}\ km^2$

2)

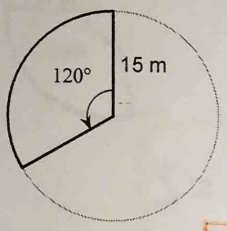


$A = \frac{90}{360}\pi(12)^2$

$A = \frac{1}{4}\pi \cdot 144$

$A = 36\pi\ cm^2$

3)

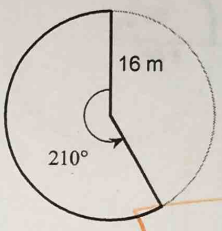


$A = \frac{120}{360}\pi(15)^2$

$A = \frac{1}{3} \cdot \pi \cdot 225$

$A = 75\pi\ m^2$

4)

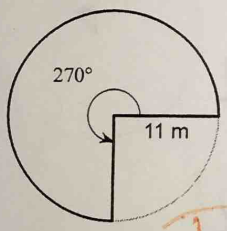


$A = \frac{210}{360}\pi(16)^2$

$A = \frac{7}{12}\pi \cdot 256$

$A = \frac{448\pi}{3}\ m^2$

5)

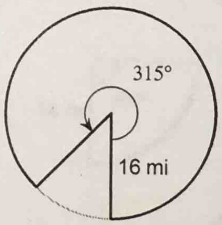


$A = \frac{270}{360}\pi(11)^2$

$A = \frac{3}{4}\pi 121$

$A = \frac{363\pi}{4}\ m^2$

6)



$A = \frac{315}{360}\pi(16)^2$

$A = \frac{7}{8}\pi\ 256$

$A = 224\pi\ mi^2$

7) $r = 19$ cm, $\theta = 135°$

$A = \frac{135}{360}\pi(19)^2$

$A = \frac{1083\pi}{8}\ cm^2$

8) $r = 9$ in, $\theta = 120°$

$A = \frac{120}{360}\pi(9)^2$

$A = 27\pi\ in^2$

9) $r = 5$ ft, $\theta = 90°$

$A = \frac{90}{360}\pi(5)^2$

$A = \frac{25\pi}{4}\ ft^2$

10) $r = 16$ ft, $\theta = 210°$

$A = \frac{210}{360}\pi(16)^2$

$A = \frac{448\pi}{3}\ ft^2$

11) $r = 15$ m, $\theta = 90°$

$A = \frac{90}{360}\pi(15)^2$

$A = \frac{225\pi}{4}\ m^2$

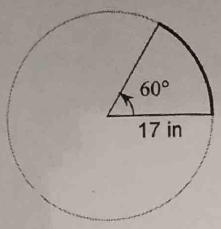
12) $r = 5$ yd, $\theta = 120°$

$A = \frac{120}{360}\pi(5)^2$

$A = \frac{25\pi}{3}\ yd^2$

Find the length of each arc. $S = \frac{\theta}{360}(2\pi r)$

13)

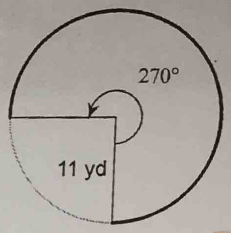


$S = \frac{60}{360}(2\pi 17)$

$S = \frac{1}{6}(34\pi)$

$S = \frac{17\pi}{3}$ in

14)

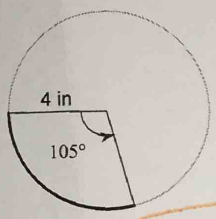


$S = \frac{270}{360}(2\pi 11)$

$S = \frac{3}{4}(22\pi)$

$S = \frac{33\pi}{2}$ yd

15)

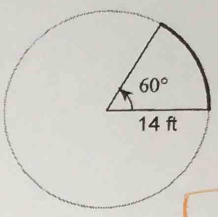


$S = \frac{105}{360}(2\pi 4)$

$S = \frac{7}{24}(8\pi)$

$S = \frac{7\pi}{3}$ in

16)

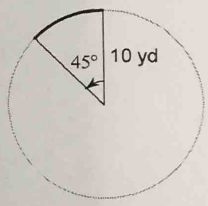


$S = \frac{60}{360}(2\pi 14)$

$S = \frac{1}{6}(28\pi)$

$S = \frac{14\pi}{3}$ ft

17)

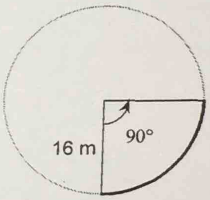


$S = \frac{45}{360}(2\pi 10)$

$S = \frac{1}{8}(20\pi)$

$S = \frac{5\pi}{2}$ yd

18)



$S = \frac{90}{360}(2\pi 16)$

$S = \frac{1}{4}(32\pi)$

$S = 8\pi$ m

19) $r = 10$ ft, $\theta = 270°$

$S = \frac{270}{360}(2\pi 10)$ $S = 15\pi$ ft

20) $r = 19$ yd, $\theta = 45°$

$S = \frac{45}{360}(2\pi 19)$ $S = \frac{19\pi}{4}$ yd

21) $r = 14$ cm, $\theta = 255°$

$S = \frac{255}{360}(2\pi 14)$ $S = \frac{119\pi}{6}$ cm

22) $r = 12$ cm, $\theta = 270°$

$S = \frac{270}{360}(2\pi 12)$ $S = 18\pi$ cm

23) $r = 16$ mi, $\theta = 165°$

$S = \frac{165}{360}(2\pi 16)$ $S = \frac{44\pi}{3}$ mi

24) $r = 9$ m, $\theta = 90°$

$S = \frac{90}{360}(2\pi 9)$ $S = \frac{9\pi}{2}$ m