

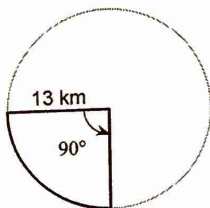
Arc Length and Area of Sectors

Find the area of each sector.

$$A = \frac{\theta}{360} \pi r^2$$

key

1)

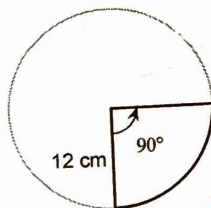


$$A = \frac{90}{360} \pi (13)^2$$

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

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

2)

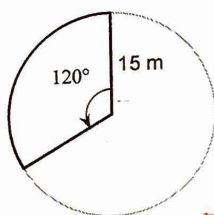


$$A = \frac{90}{360} \pi (12)^2$$

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

$$A = 36\pi \text{ cm}^2$$

3)

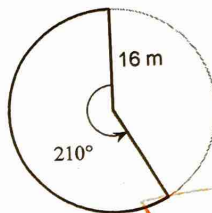


$$A = \frac{120}{360} \pi (15)^2$$

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

$$A = 75\pi \text{ m}^2$$

4)

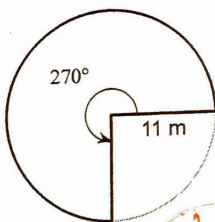


$$A = \frac{210}{360} \pi (16)^2$$

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

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

5)

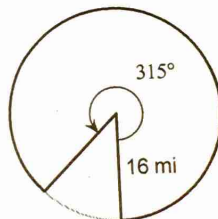


$$A = \frac{270}{360} \pi (11)^2$$

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

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

6)



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

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

$$A = 224\pi \text{ mi}^2$$

7) $r = 19 \text{ cm}, \theta = 135^\circ$

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

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

8) $r = 9 \text{ in}, \theta = 120^\circ$

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

$$A = 27\pi \text{ in}^2$$

9) $r = 5 \text{ ft}, \theta = 90^\circ$

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

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

10) $r = 16 \text{ ft}, \theta = 210^\circ$

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

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

11) $r = 15 \text{ m}, \theta = 90^\circ$

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

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

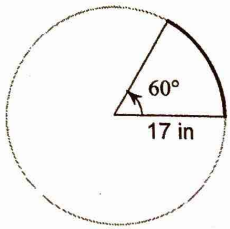
12) $r = 5 \text{ yd}, \theta = 120^\circ$

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

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

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

13)

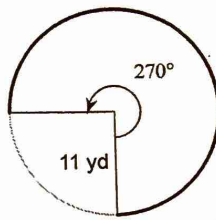


$$S = \frac{60}{360} (2\pi 17)$$

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

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

14)

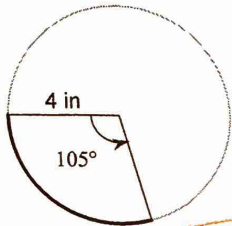


$$S = \frac{270}{360} (2\pi 11)$$

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

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

15)

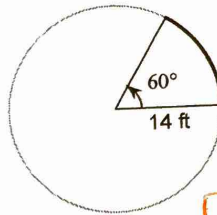


$$S = \frac{105}{360} (2\pi 4)$$

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

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

16)

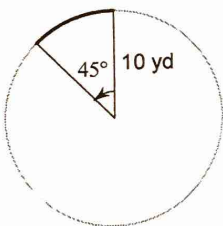


$$S = \frac{60}{360} (2\pi 14)$$

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

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

17)

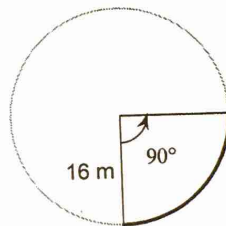


$$S = \frac{45}{360} (2\pi 10)$$

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

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

18)



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

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

$$S = 8\pi \text{ m}$$

19) $r = 10 \text{ ft}, \theta = 270^\circ$

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

$$S = 15\pi \text{ ft}$$

20) $r = 19 \text{ yd}, \theta = 45^\circ$

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

$$S = \frac{19\pi}{4} \text{ yd}$$

21) $r = 14 \text{ cm}, \theta = 255^\circ$

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

$$S = \frac{119\pi}{6} \text{ cm}$$

22) $r = 12 \text{ cm}, \theta = 270^\circ$

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

$$S = 18\pi \text{ cm}$$

23) $r = 16 \text{ mi}, \theta = 165^\circ$

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

$$S = \frac{44\pi}{3} \text{ mi}$$

24) $r = 9 \text{ m}, \theta = 90^\circ$

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

$$S = \frac{9\pi}{2} \text{ m}$$